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AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC) NOMINATION ANALYSIS FOR THE PROPOSED PRONGHORN ACEC

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Executive Summary

In June of 1998, the BLM received a proposal from the Oregon Natural Desert Association (ONDA) and 21 other groups to nominate almost two million acres of public land in Oregon and Nevada as an Area of Critical Environmental Concern (ACEC). The area was nominated for the purpose of recognizing and protecting pronghorn antelope habitat, numerous sensitive and at-risk species habitats, specific ecological communities, cultural resources, and recreational values. The proponents suggested that the area be managed similarly to the adjacent Hart Mountain and Sheldon National Antelope Refuges (ie. no livestock grazing or mining activity) in order to protect and improve habitat for pronghorn antelope habitat and other sensitive species.

The proposed ACEC area is administered by BLM offices in Oregon, California, and Nevada. As a result, the BLM concluded an inter-office evaluation of this proposal using the requirements outlined in Bureau 1613 Manual (BLM, 1988). To be designated as an ACEC, an area must meet both the relevance and importance criteria listed in the manual **and** require special management. A summary of our findings are as follows:

- The relevance criteria is met for most resource values described in the proposal;
- The importance criteria is met for some resource values in specific, discrete areas or locations within the proposal area;
- There is little need for additional special management throughout most of the proposal area, as existing plans provide adequate direction for the protection of the relevant/important resource values.

These findings will be incorporated into the ongoing Southeast Oregon Resource Management Plan (RMP) and considered in the Lakeview RMP which is scheduled to begin in June, 1999. These findings will be considered in the next scheduled plan revisions or amendments in the other BLM Field Offices in California and Nevada.

Table 1 summarizes the evaluation findings by listing those resource values within the proposed ACEC area that meet the ACEC criteria (relevance, importance, and need for special management). The main text following the table provides details describing the various resource values within the proposed ACEC and why they do or do not meet the criteria.

Table 1. Summary of Resources in the Proposed ACEC Area that Meet ACEC Criteria.

Resource	Relevance	Importance	Current Management Direction	Additional Special Management Needed?
Cultural	Numerous sites throughout the area.	Small areas or some assemblages of sites.	Existing laws, regulations (ARPA, NHPA), BLM policies, National Register, and ACEC management plans.	Specific areas only.
Scenic	High Rock Canyon Applegate/Lassen Trail, and Lahontan Cutthroat Trout Natural Area Rim.	Specific areas only.	Wilderness IMP and existing ACEC management plans.	None.
Fish and Wildlife	13 species (see Table 3).	7 species including all sage grouse habitat, antelope winter range.	Existing laws, regulations, BLM policies, and land use, activity level, and ACEC management plans.	None.
Natural Processes/ Systems	Specific, limited areas of occurrence for sensitive plant species, plant communities, and associated habitats or soil types.	Specific areas only (see Tables 4, 5, and 6).	Existing laws, regulations, BLM policies, and land use, activity level, and ACEC management plans.	Specific areas only.
Natural Hazards	Fisher Hot Spring	Fisher Hot Spring	None.	None

Introduction

Background

In June of 1998, the Bureau of Land Management (BLM) received a proposal from the Oregon Natural Desert Association (ONDA, 1998) and 21 other environmental groups to nominate almost two million acres of land as an Area of Critical Environmental Concern (ACEC) (Map 1 and Table 2). Approximately half of the proposed ACEC is BLM-administered land. The area was nominated for the purpose of recognizing and protecting pronghorn antelope habitat, numerous sensitive and at-risk species habitats, specific ecological communities, cultural resources, and recreational values. Accompanying the nomination was a great deal of information explaining why the proponents believe the area should be designated as an ACEC and why the area should be managed similarly to the two adjacent national wildlife refuges (i.e. no grazing and no mining).

Section 202 of the Federal Land Policy and Management Act requires the Bureau of Land Management (BLM) to give priority to designation and protection of ACECs during the land use planning process. However, potential ACECs may be nominated by BLM staff, other agencies, or members of the public at any time.

This particular proposal has generated considerable public interest and controversy. This ACEC evaluation is being done now because the Burns and Vale Districts are currently in the process of finalizing a resource management plan (RMP) for the Andrews, Malheur, and Jordan Resource Areas in southeastern Oregon and the Lakeview Resource Area of the Lakeview District is beginning to prepare a new RMP for public lands it manages. This evaluation will provide specific data for these land use planning processes.

Definition of an Area of Critical Environmental Concern

BLM regulations (43 CFR part 1610) define an ACEC as an area "within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards."

ACECs differ from other special management designations such as Wilderness Study Areas (WSAs) in that the designation, by itself, does not automatically prohibit or restrict other uses in the area. The one exception is that a Plan of Operation is required for any proposed mining activity within an ACEC. The ACEC designation is an administrative designation and is accomplished through the land use planning process. It is unique to the BLM in that no other agency uses this form of designation. The intent of Congress in mandating the designation of ACECs through the Federal Land Policy and Management Act of 1976, was to give priority to the designation and protection of areas containing truly unique and significant resource values.

Some local examples of ACECs located within or near the proposed ACEC include the Lake Abert and Warner Wetlands ACECs in the Lakeview District, the High Rock ACEC in the Surprise Field Office, and the Soldier Meadows ACEC in the Winnemucca Field Office.

Proposed Pronghorn ACEC

The proposed Pronghorn ACEC area is located in southeastern Oregon and northern Nevada, between Hart Mountain and Sheldon National Antelope Refuges, within the northern most part of the Northern Great Basin (Map 1). The proposed ACEC boundary encompasses over one million acres of public land administered by four BLM offices (Lakeview and Burns Districts in Oregon, Surprise Field Office in California, and Winnemucca Field Office in Nevada) (Table 2).

Table 2. Land Ownership within the Proposed ACEC

<i>Landowner</i>	<i>Acres</i>
Bureau of Land Management (BLM)	
Burns District, Oregon	62,493
Lakeview District, Oregon	515,524
Surprise Field Office, California	274,740
Winnemucca Field Office, Nevada	157,230

BLM subtotal	1,009,987
U.S. Fish and Wildlife Service (USFWS)	
Hart Mountain Antelope Refuge	263,151
Sheldon Antelope Refuge	549,665

USFWS subtotal	812,816
State of Oregon	32,510
Private Landowners	84,257
Indian Reservation	1,275
Other (Water, Unknown)	8,812
Total Acres	1,949,657

(Note: Acres on above table correspond to who is responsible for surface management jurisdiction (Map 1). With respect to refuge lands, these acres do not necessarily correspond to the acres officially withdrawn from the public land laws for the purpose of wildlife refuges.)

Other major land holdings within the proposed ACEC boundary include lands administered by the U.S. Fish and Wildlife Service (Hart Mountain and Sheldon

National Antelope Refuges), the State of Oregon, The Nature Conservancy, and numerous private individuals. However, under the authority of the Federal Land Policy and Management Act, ACEC designation can only be applied to BLM-administered land. Therefore, only resource values on BLM-administered lands are evaluated within this document.

Requirements for ACEC Designation

To be designated as an ACEC, an area must meet the relevance and importance criteria listed in BLM 1613 Manual (BLM 1988) **and** require special management. Specific evaluation questions for each of these three elements are listed below.

Relevance Criteria: Does the area contain one or more of the following:

- A significant historic, cultural, or scenic value?
- A fish and wildlife resource?
- A Natural process or system?
- A natural hazard?

Importance Criteria: Does the value, resource, system, process, or hazard described above have substantial significance or value? Does it meet one or more of the following criteria:

- Is it more than locally significant, especially compared to similar resources, systems, processes, or hazards within the region or nation?
- Does it have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change?
- Has it been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA?
- Does it have qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare?
- Does it pose a significant threat to human life and safety or property?

Need for Special Management: Does the value, resource, system, process, or hazard require special management to protect (or appropriately manage) the important/ relevant value(s)? Special management is defined as or is needed when:

- 1) Current management activities are not sufficient to protect a given relevant/important resource value and a change in management is needed that is not consistent with the existing land use plan(s).
- 2) The needed management action is considered unusual or outside of the normal range of management practices typically used.
- 3) The change in management is difficult to implement without ACEC designation.

Evaluation Process

The BLM is responsible for evaluating a nominated area to determine if it meets the relevance/importance criteria and requires special management. This ACEC evaluation was conducted jointly by the four BLM offices that administer land within the proposed ACEC boundary. Each BLM office evaluated lands within their respective jurisdiction. Several inter-disciplinary, inter-office meetings were held during the evaluation process to insure all offices were taking a consistent approach to the evaluation and to address the resource values/issues within the context of the larger landscape/ecosystem.

Even though the Oregon Natural Desert Association did not specifically address or make recommendations on scenic and natural hazards, these resource values are being addressed at this time because the planning guidance requires that they be addressed and to avoid the need to prepare a separate evaluation addressing them in the future. In addition, the proponents raised recreational values as a criteria to consider during the evaluation process. The planning regulations do not allow or consider recreational values to be used when evaluating a potential ACEC. Therefore, this value/issue is not addressed in the evaluation.

Although there is no required time frame in which an evaluation must be completed following a nomination, this evaluation is being completed at this time due to the high level of interest from the general public, local concerns, and because the information is needed for use in the Lakeview Resource Management Plan (RMP) which is being initiated this year.

Public Involvement

This ACEC proposal has generated considerable interest from other state and federal agencies, county governments, resource advisory councils (RAC), and individuals. A copy of the proposal has been provided to area tribal governments, Southeastern Oregon Resource Advisory Council (RAC), Northeast California RAC, and Sierra Front and Northwest Great Basin RAC members, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service (Hart and Sheldon Wildlife National Antelope Refuges), Nevada Division of Wildlife, Lake, Harney, and Humboldt County commissioners, local newspapers, and numerous individuals.

The Southeastern Oregon RAC recently formed a subcommittee to review the proposal, take a field tour (of the Oregon portion of the proposal area), and submit formal comments on the proposal. This RAC recently passed a resolution and forwarded to the BLM in which they felt the area met the relevance criteria, but did not meet the importance criteria and, therefore, they recommended rejection of the proposal, as submitted, with future consideration of the smaller portions of the area (within Oregon) that meets the criteria during the upcoming Lakeview Resource Area Resource Management Plan (RMP) (letter dated February 22, 1999).

The Sierra Front and Northwest Great Basin RAC recently passed a resolution stating the information presented was not sufficient to support ACEC designation.

As of mid-April 1999, over 30 letters concerning the proposed ACEC have been received; a few in favor and most against the proposed designation. The BLM has coordinated with the Oregon Department of Fish and Wildlife (ODFW), the Nevada Division of Wildlife (NDOW), and the U.S. Fish and Wildlife (USFWS) for assistance in evaluating the accuracy of the biological information presented by the proponents. Both the ODFW and USFWS believe that existing management plans/practices in the area are generally adequate for the protection of antelope, sage grouse, and other species listed in the proposal (letters dated September 3, 1998 and November 3, 1998). NDOW supports "the concept of a High Desert landscape management scenario involving the four BLM jurisdictions", but expressed reservations about the increased use of prescribed fire as a management tool due to its potential impact on sage grouse and pronghorn antelope habitat (letter dated March 22, 1999).

An ACEC evaluation is considered part of the supporting record for the land use planning process and is, therefore, not normally widely distributed for public review. However, due to the interest in this proposal, this document will be made available to the public on a request basis. Additional public involvement opportunities are described in the section titled "The Next Step" towards the end of this document.

Evaluation for Relevance and Importance Criteria

Cultural Values

For the purposes of this evaluation, an area would meet the relevance criteria for cultural values if it is more than locally significant. This is defined as: a site or group of sites which are unique within the region or nation. Sites which are considered to be representative of many known sites (in other words, are relatively common) within the local area are not considered to be unique.

A site/area would meet the importance criteria if:

- 1) the site or group of sites are so fragile, sensitive, or rare, that, if lost would be irreplaceable. In other words, it represents the "best of the best" and no other comparable site(s) exists from which data can be extrapolated.
- 2) it meets National priority concerns via an existing National special designation such as, National Historic Trail, National Landmark, National Register site or District, or Traditional Cultural Property (TCP). It could meet this criteria by being nominated as a TCP or by being eligible for listing on the National Register for more than local significance.
- 3) an historic structure or cultural feature that is in such a state of disrepair or in an unstable condition as to pose a significant human health or safety hazard.

The proposed ACEC contains archaeological, historic, and cultural sites. Many sites fall within more than one of these categories. Within the proposal area, various levels of inventory have been completed. In some areas, systematic surveys have been completed, in other areas, no survey work has been done. From this past work, we know that the area contains many sites of various types. These include: lithic scatters, lithic procurement sites, lithic reduction sites, occupation sites, rock art sites, burial sites, caches, hunting stations, game drives, rock cairns, rock features, religious sites, caves and rock shelters, resource procurement stations, resource processing stations, historic trails and roads, and historic structures. Sites are believed to range in time from 12,000 years ago to historic times. In addition to archaeological sites, the area contains places and features which are important to Indian Peoples of the region. These are called Traditional Cultural Properties (TCP). The majority of these have no visible features, rather they are natural features, places and resource locations which continue to be of importance to Indian People. While many sites have been listed on the National Register of Historic Places or have been determined to be eligible, the majority remain un-evaluated.

The area contains significant and unique rock art locations and early period sites of the stemmed point and clovis time periods (approximately 8,000 to 12,000 years ago). The rock art is mostly concentrated in upland, low sagebrush plateau areas in certain geographic areas. It is one of the largest concentrations of rock art sites in North America (Ricks, 1995). These sites are considered to be eligible for nomination to the National Register of Historic Places for national significance. This area of rock art concentration has been proposed by BLM staff for protection as either an ACEC, Traditional Cultural Property (TCP), and/or a National Register District. This area, much smaller in size than the Pronghorn proposal, is currently being considered under a separate ACEC evaluation process (BLM, in prep.).

The Clovis site and stemmed point sites are concentrated in small, specific geographic areas. The Clovis site is one of only two known within the entire eastern Oregon region.

A portion of the Applegate/Lassen Trail is located within the proposed ACEC boundary. The portion of this trail which falls within the proposed ACEC is currently listed on the National Register of Historic Places and it is a part of the congressionally designated National Historic Trail system. This trail is unique because its setting is relatively unaltered through this entire area. The existing 24,000-acre High Rock Canyon ACEC was designated, in part, to protect the Applegate/Lassen trail corridor and the physical remains associated with the trail.

The Applegate/Lassen Trail and eligible sites in the Soldier Meadows area are also part of the proposed expansion of the Soldier Meadows ACEC and the proposed Black Rock Desert ACEC (BLM, 1998a; 1998c).

The Oregon Central Military Wagon Road also crosses the area. Portions of this feature have also been found eligible for inclusion on the National Register of Historic Places. The route of Captain John C. Fremont also traverses this area, but no physical remains are known, however the location of the route and some camp sites

can be determined with a fair degree of accuracy. One campsite exists south of the proposed ACEC boundary on the Winnemucca Field Office.

The remains of homestead era activity are also an important component of the historic/cultural resources in the area, with some of these sites qualifying for listing on the National Register. One example is the Shirk Ranch complex located on the western edge of Guano Valley. It is being nominated to the National Register based on regional significance.

National Register eligibility is based upon the following criteria:

- a) site(s) that are associated with events that have made a significant contribution to the broad patterns of our history; *or*
- b) that are associated with the lives of persons significant in our past; *or*
- c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; *or*
- d) that have yielded, or may be likely to yield, information important in prehistory or history.

Most archaeological resources found in the area qualify for National Register listing under criterion "d" (above), while the Applegate/Lassen trail, for example, qualifies under criterion "a" and "b" (and possibly "d"). The majority of sites in the proposal area are eligible for listing on the basis of local significance only and, therefore, do not meet the ACEC importance criteria. Some sites are eligible on the basis of regional significance or national significance. These sites meet the ACEC importance criteria.

Old, historic structures may also pose a human health/safety hazard to visiting public because some are in an unstable condition. However, due to the general remoteness of many of these structures and the relatively low number of public visiting the area, this is not considered to be a significant health or safety risk.

Scenic Values

Scenic values can be found throughout the entire proposed area to varying degrees and with varying degrees of relevance. The area is typical of that found throughout the Northern Great Basin and is characterized by rolling sageland broken by low rimrock and interlaced by intermittent and ephemeral stream drainages, sink lakes, and volcanic soils and stone. Most of the scenic values found within the proposed ACEC are relatively common and not more than locally significant.

Scenic values were assigned to all public lands following a visual resource inventory. Lands were classified into one of three scenic quality classes based upon a numeric scoring system that considered seven factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Any sites receiving more than 55 percent of the total points, or "sites that combine the most outstanding characteristics of each rating factor" were rated as having Class A scenic quality (BLM, 1980).

For the purposes of this evaluation, only areas qualifying as Class A scenic quality features are deemed to meet the relevance and importance criteria for scenic values. Areas listed or qualifying as National Heritage (NHT) Viewsheds would also meet the importance criteria for scenic values.

There are two areas in the southern part of the proposed ACEC area that meet the scenic criteria. The High Rock Canyon area, totaling approximately 25,000 acres, is rated as Class A scenic quality. The High Rock Canyon ACEC was designated, in part, to protect the high scenic values found there. The viewshed from the Applegate/Lassen trail is also considered to be a unique visual resource from a national perspective.

The second area is comprised of a couple hundred acres immediately east of the Summit Lake Indian Reservation along the southeast edge of the proposed ACEC. This small area is part of the Lahontan Cutthroat Trout Natural Area, a 12,316 acre Instant Study Area of which the northern portion is rated as Class A scenic quality. An instant study area has the same status as a Wilderness Study Area (WSA).

Approximately 366,053 acres (18.8%) of the federal land proposed for inclusion in the Pronghorn ACEC is also completely or partially within WSAs. The nine WSAs are: Hawk Mountain, Rincon, Pueblo Mountains, Guano Creek, Spaulding, Sage Hen Hills, Sheldon Contiguous, Massacre Rim, and East Fork High Rock Canyon. Although these WSAs have scenic values and are currently managed in such a manner as to preserve existing scenic values pending wilderness designation (BLM, 1995), none of the WSAs were found to contain Class A scenic quality during the Bureau's visual resource inventories, except that portion of the High Rock Canyon area mentioned above.

Overall, the area within the ACEC proposal is very typical of the scenery found throughout the Northern Great Basin. Only the High Rock Canyon area (approximately 1.3%) could be considered unique on a regional basis.

Fish and Wildlife Resources

The proposed ACEC area contains habitat essential for many fish and wildlife species common to the sagebrush steppe and Great Basin. Special status species known to occur within a portion of the proposed ACEC are included on Table 3, along with some species that may have potential habitat in the area.

For the purposes of this evaluation, the following criteria were used to evaluate relevance and importance with respect to fish and wildlife resources:

Table 3. Fish and Wildlife Species Occurring in the Proposed ACEC

Species	Status	Occurrence*				Criteria Relevant/Important	Remarks	
		B	L	W	S			
Fish and Amphibians								
Desert Dace <i>Eremichthys acros</i>	Federal Threatened			X		X	X	Criteria are met in limited habitat area.
Alvord Chub <i>Gila alvordensis</i>	Federal species of concern; Nevada Natural Heritage Program imperiled; Oregon sensitive species			X		X	X	Criteria are met in limited habitat area.
Sheldon tui chub <i>Gila bicolor eury soma</i>	Federal species of concern; BLM sensitive, Oregon state critical		P(S)		X	X	X	Criteria are met in limited habitat area.
Lahontan Cutthroat Trout <i>Oncorhynchus clarki henshawi</i>	Federal Threatened							Occurs outside proposed ACEC boundary.
Columbia Spotted Frog <i>Rana luteiventris</i>	Federal candidate			P				Occurrence in proposed ACEC is unknown.
Invertebrates								
Denio Sandhill Skipper	Federal species of concern							Occurrence in proposed ACEC is unknown.
Wetland Birds								
Snowy Egret <i>Egretta thula</i>	Oregon State Vulnerable		S					
Great Egret <i>Ardea alba</i>			S					
Long-billed Curlew <i>Numenius americanus</i>	Oregon State Vulnerable	P	X		P	X		
White-faced Ibis <i>Plegadis chihi</i>	Federal species of concern; Oregon sensitive species		S		P			
Greater Sandhill Crane <i>Grus canadensis tabida</i>	Oregon State Vulnerable		S		S			
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i>	Federal Species of Concern. Oregon State Threatened. Nevada Natural Heritage critically imperiled.				P			Occurrence in proposed ACEC is unknown.
American White Pelican <i>Pelecanus erythrorhynchos</i>	Oregon sensitive species				O			Occasional siting only in area.
Terrestrial Birds								
Peregrine Falcon <i>Falco peregrinus anatum</i>	Federal endangered	S	S		O			

Table 3. Fish and Wildlife Species Occurring in the Proposed ACEC (continued)

Species	Status	Occurrence*				Criteria		Remarks
		B	L	W	S	Relevant/Important		
Terrestrial Birds continued								
Bald Eagle <i>Haliaeetus leucocephalus</i>	Federal threatened		S		S			
Ferruginous Hawk <i>Buteo regalis</i>	Federal species of concern. Oregon sensitive species.	X	X		X	X		
Western Burrowing Owl <i>Athene cunicularia hypugea</i>	Federal species of concern. Nevada Special Status Species. Nevada Natural Heritage Program secure, but rare. Oregon sensitive species		P	P	X	X		
Sage Grouse <i>Centrocercus urophasianus phaios</i>	BLM sensitive	X	X	X	X	X	X	Meets the criteria In areas where the bird is found.
Blue-gray Gnatcatcher <i>Poliophtila caerulea</i>			S	X	X	X		Limited nesting habitat.
Columbian Sharp-tailed Grouse	Extirpated throughout region							
Yellow-billed Cuckoo			O					
Bats								
Spotted Bat <i>Euderma maculatum</i>	Federal species of concern		P	P	P			Occurrence in area is unknown.
Long-legged Bat <i>Myotis volans</i>	Federal species of concern	P	P	P	P			Occurrence in area is unknown.
Long-eared Bat <i>Myotis evotis</i>	Federal species of concern	P	P	P	P			Occurrence in area is unknown.
Yuma Bat <i>Myotis yumanensis</i>	Federal species of concern	P	P	P	P			Occurrence in area is unknown.
Small Mammals								
Pygmy Rabbit <i>Brachylagus idahoensis</i>	Federal species of concern; Oregon sensitive species	X	P	P	X	X	X	Habitat extent is unknown.
White-tailed Antelope Squirrel <i>Ammospermo-philus leucurus</i>	Oregon sensitive species	X	P		X	X		
White-tailed Jack Rabbit <i>Lepus townsendii</i>	Oregon sensitive species		P	P	P			Presence in ACEC area is unknown.
Preble's Shrew <i>Sorex preblei</i>	Federal species of concern		P	P	P			

Table 3. Fish and Wildlife Species Occurring in the Proposed ACEC (continued)

Species	Status	Occurrence*				Criteria		Remarks
		B	L	W	S	Relevant/Important		
Big Game Mammals								
Pronghorn Antelope <i>Antilocapra americana</i>		X	X	X	X	X	X	Criteria are met in critical winter habitat only.
California Bighorn Sheep <i>Ovis canadensis californiana</i>	Federal species of concern; BLM sensitive		X	X	X	X	X	Criteria are met in all occupied habitat.
Mule Deer <i>Odocoileus hemionus</i>		X	X	X	X	X		
* B= Burns; S= Surprise; W = Winnemucca; L= Lakeview; X = species is present during much of the year; P = potential habitat present; S = Seasonal/Migrant; O = Occasional Siting								

1) Bureau listed, sensitive, species of concern, or state listed special status species were considered to be more than locally significant and, at a minimum, regionally important.

2) Federally listed threatened or endangered species were considered to be regionally and nationally important.

3) Species or habitats where there is a perceived, immediate threat(s) were considered to meet the importance criteria.

There are thirteen fish/wildlife species within the proposed ACEC considered to satisfy the relevance criterion. Seven of these thirteen species are also considered to meet the importance criterion. Those that are both relevant and important include three fish, one terrestrial bird, one small mammal and two big game mammals (Table 3).

Fish and Amphibians

Three of the special status species fish species known to occur in the proposed ACEC meet both the relevant and importance criteria: desert dace, Alvord chub, and Sheldon tui chub. Rationale supporting the criteria for these species is their special status listing and habitat values within the proposed ACEC.

Desert Dace: this species is a small minnow (Cyprinidae), 2.5 inches maximum length. All known populations and habitat of the desert dace lie within eight hot spring pools and channels within the Soldier Meadow area. It is the only member of the genus *Eremichthys*, and apparently dates back thousands of years in the Soldier Meadows area. The proposed ACEC contains two of the eight hot spring complexes known to be inhabited by the desert dace. In September 1982, about 300 acres of public land were designated as the Soldier Meadow Desert Dace Area of Critical Environmental Concern, and the first Desert Dace Habitat Management Plan was completed (BLM, 1983b). In 1984, the area was also designated as a Research Natural Area. The ACEC designation was based on a need for special management attention to protect and prevent irreparable damage to important biological, cultural,

and historic resources. The desert dace was Federally listed as threatened and critical habitat was determined in December of 1985 (*Federal Register*, Vol. 50, p. 50304). Reasons listing the desert dace as threatened were: 1) the diversion of water from the hot springs and their outflows for irrigation purposes, 2) potential predation and competition from introduced exotic fish species in Mud Meadow Reservoir, and 3) the possibility of geothermal exploration and development disrupting flows in the springs and outflows inhabited by the dace. A proposal in the Soldier Meadows Activity Plan (June 1998) to expand the ACEC and RNA to 35,340 acres is being addressed as part of the Land Use Plan Amendment for the Black Rock Desert (BLM, 1998c).

There is limited information about the desert dace and its habitat requirements. Some studies show the species has high and broad temperature tolerance (Nyquist, 1963; Vinyard, 1988). Water temperature appears to be a major factor controlling the distribution of desert dace within a spring system. When temperature at a spring head exceeds 100° F, desert dace are restricted to the cooler outflow downstream from the springs. As the outflow water cools to below 70° F, the dace move into warmer water closer to the spring source. The range of the desert dace within each of these pool and outflow systems expands during the summer and contracts during the winter.

No population studies have been conducted, but in 1973 the USFWS estimated approximately 100,000 individuals existed, indicating their populations are at relatively stable levels (Vinyard, 1988). One habitat concern is water level changes that could potentially cause non-native species (such as channel catfish, goldfish, and large mouth bass) inhabiting Mud Meadow Reservoir to enter nearby habitats occupied by the desert dace; if this happens, the non-native species would likely compete with and/or prey on the desert dace. Non-native species may also expose foreign disease or parasites to the native species.

Most thermal springs and their outflow creeks inhabited by the desert dace occur on lands obtained by the BLM from The Nature Conservancy in 1993. Prior to that year, much of the desert dace's habitat was modified by ranching operations that diverted water away from natural channels into manmade ditches. Diversion of the outflow water away from natural channels is harmful in spring systems where the head pool temperature exceeds 100° F and the species can only occupy the outflow channels.

Alvord Chub: the only known occurrence of this fish within the proposed ACEC is in West Creek, the outflow of West Spring, southwest of Gridley Lake (T. 44 N., R. 27 E. Secs. 20, 28, and 29). The creek is approximately two miles long, between three to seven feet wide and less than six inches deep. A little over one mile of the creek flows through public lands. Alvord chubs are found throughout the creek. This population is 1 of 16 habitats located throughout the Alvord Basin in Oregon and Nevada. However, it is one of the smaller known habitats. Other habitats for this species in the basin are better in terms of size, quality, and connectivity.

Sheldon Tui Chub: although the proposed ACEC contains many springs, intermittent streams, and associated riparian areas, the Sheldon tui chub is only known from a couple of locations. One population exists within a livestock enclosure on the Bitner Ranch, just south and west of the Sheldon National Antelope Refuge. This property represents a recent BLM acquisition. The other known occurrence is in perennial streams on the Sheldon National Antelope Refuge. In high water years, the chub may

be found in the lower, intermittent reaches of Guano Creek, Guano Slough, Piute Creek, Guano Lake, and on wetlands on the Shirk Ranch. This hydrologic system, particularly the Shirk Ranch, has been disturbed in the past by construction of an irrigation system.

Other Fish Species: Cut-throat trout occur in perennial reaches of streams south of Hart Mountain and Jacob's Reservoir and move into intermittent reaches of Guano Creek and into Guano Slough and the Shirk Ranch in high water years. Rainbow trout are released annually in Mud Lake and Spaulding Reservoirs. Generally speaking, the sport fishery in the area has some local significance, but no regional or national importance.

Columbia spotted frog: no records of occurrence could be found for this species within the proposed ACEC. However, there is one record of this species occurring about eight miles outside of the proposal area. The proposed ACEC likely contains some suitable habitat for this species, but the amount of suitable habitat is unknown due to the absence of species-specific studies.

Bird Species

In general, bird habitats within the proposed ACEC are only locally significant when compared to similar habitats within the northern Great Basin. For bird species, the presence of nesting habitat was considered to meet the relevance criteria. Similar shrub steppe habitat that supports the same or greater diversity of bird species occurs on BLM-administered lands on surrounding lands. Five bird species meet the relevance criterion in the proposed ACEC. Only one bird species (sage grouse) was determined to meet both the relevance and importance criteria (Table 3).

Wetland Bird Species

Most of the wetland bird species and their habitats discussed below are considered, both singularly and collectively, to be only locally significant. The same is true for other wetland shorebird and waterfowl species not specifically mentioned in the ACEC proposal. In comparison, Warner Valley to the west and Malheur Lake to the north, each contain large and healthy nesting populations of the wetland species described below, as well as, other shorebirds and waterfowl species. On a local, basin-wide, flyway, or regional scale the area is of minimal importance to these species. Therefore, no wetland bird species are considered to meet the importance criteria. Further, there presently is no documented significant wetland wildlife resource documented to be at risk from current management practices or other reasons.

Great Egret and Snowy Egret: both species have been observed at the Shirk Ranch, but there is no known nesting population for either species anywhere in the proposed ACEC.

White-faced Ibis: there is migratory use by white-faced ibis at Guano Lake and Shirk Ranch, but no record of nesting anywhere within the proposed ACEC. Studies or monitoring of the species status and the amount of suitable habitat has not been conducted. At this time, it cannot be determined whether the potential habitat available is essential for species survival or maintenance of species diversity.

Long-billed Curlew: within the Oregon portion of the proposed ACEC, this species is fairly wide-spread and a common nesting species in appropriate habitats. Known nesting populations exist at Antelope Flat, Greaser Lake, Horsehead Lake, Hawks Valley seeding, and Guano Lake. A portion of the proposed ACEC in Nevada may have some suitable habitat for this species, but of an unknown amount as no species-specific studies have been conducted.

Greater Sandhill Crane: this species is an occasional spring/fall migrant, primarily at the Shirk Ranch, but has no record of nesting anywhere within the proposed ACEC.

Western Snowy Plover: there are no records of this species nesting in the proposed ACEC, but there is one known nesting site just outside the proposed ACEC boundary and it likely is found sporadically around that known site. Snowy plovers exist in extreme environment types, only a few of which are in the area. A small portion of the proposed ACEC, most notably the playas associated with Massacre Lakes west of the Sheldon Wildlife Refuge in the Surprise Resource Area, may contain some habitat for this species. However, it cannot be positively determined whether habitat essential for species survival or maintenance occurs in the area.

Terrestrial Bird Species

Four of the eight terrestrial birds species listed on Table 3 and discussed below are Federal special status species. One of these (ferruginous hawk) meets the relevance criterion and another (sage grouse) meets both relevance and importance criteria.

Ferruginous hawk: this species is a neotropical migrant that ranges from Canada to Mexico. There are two historic nesting territories for this species in the proposed ACEC. Ferruginous hawks are also known to occur in limited numbers throughout portions of the area and in adjacent areas during some parts of the year. It cannot presently be determined whether this habitat is essential for this species survival or maintenance.

Sage Grouse: sage grouse are known to occur throughout the proposed ACEC during part or all year long. Breeding, nesting, brood-rearing, and wintering habitat are all available within and adjacent to the proposed ACEC. There are currently about 60 known leks and 2 known brooding areas distributed throughout the proposed ACEC (Map 3).

The sage grouse, a habitat-specific species, relies primarily on sagebrush to meet its life requirements (Patterson, 1952). Other factors critical to sage grouse are tall herbaceous cover, water availability, and protein supplied by insects. Sage grouse habitat within the proposed ACEC is typical of the Northern Basin, Range ecosystem, and the western United States, and is also similar in both quantity and quality to areas immediately adjacent to the proposed ACEC in much of northern Nevada and southern Oregon.

Although sage grouse occur over much of the intermountain west in similar population trends regionally as locally, a regional decline is being experienced. The reason for this decline is not well understood, but is currently being researched by Oregon State University. Possible causes for regional population declines may be the interaction of numerous factors including changes in sagebrush and meadow habitats, human

disturbance, and predation (Crawford and Swanson, 1999). Because of this decline, the USFWS feels (letter dated November 3, 1998) that grouse should be considered more than locally significant, providing additional rationale for meeting the importance criterion.

Large-scale vegetation manipulation such as herbicide spraying, plowing, chaining, or burning (prescribed or natural) has not been widely prevalent within the proposed ACEC. However, the use of prescribed fire in the Beaty Butte allotment is expected to increase in the near future (BLM and USFWS, 1998b). The sage grouse telemetry project being conducted by Oregon State University (Crawford and Swanson, 1999) in coordination with Hart Mountain and Sheldon National Antelope Refuges, and the Steens Mountains (Burns District, BLM) is studying the relationship of sage grouse habitat requirements and the use and effects of prescribed burning. This is year two of the 3-5 year study, which will also investigate sage grouse natality and identify any habitat limitations or crucial habitat and make recommendations to maintain or enhance sage grouse habitat in a livestock grazed habitat. Information will be compared to results from the ungrazed Hart Mountain and Sheldon Refuge studies.

The sage grouse is being considered for Federal listing throughout its range, and therefore, meets the importance criterion for locations where the bird or its habitat is found.

Western Burrowing Owl: the area contains suitable habitat for this species; however, there have not been any studies, monitoring, or inventory of the amount of suitable habitat. Considering that habitat for this species exists throughout the northern Great Basin, it is not believed that the habitat available within the proposed ACEC is essential for species survival, or maintenance of species diversity.

Blue-gray gnatcatcher: blue-gray gnatcatchers, which have a range throughout much of the United States and Mexico, are commonly observed using juniper woodlands along the western border of the proposed ACEC and are considered to be a seasonal migrant. Although the blue-gray gnatcatcher should be a relatively common species in this habitat at certain times of the year, its nesting habitat in the area is very limited.

Peregrine Falcon: the peregrine falcon may pass through the proposed ACEC on occasion, but is considered a migrant. Sightings may possibly be from reintroduction sites near the area.

Bald Eagle: the bald eagle may occur in portions of the area at certain times of the year, particularly in winter months. It is considered to be a migrant. No nesting has been recorded.

Yellow-billed Cuckoo: there are reports of accidental or occasional occurrences of this species passing through the area; however, nesting habitat is very limited.

Bats

Spotted bat, Long-eared myotis, Yuma bat, and Long-legged myotis: single records for long-legged myotis and Yuma myotis exist just outside the boundary of the proposed ACEC. The proposed ACEC may also contain some suitable habitat for these four bat species, but in much the same quality and quantity as other areas

throughout the Northern Great Basin. Species-specific studies or monitoring on the status of these species and the amount of suitable habitat available has not been conducted. It cannot presently be determined whether the potential habitat available is essential for species survival or maintenance of species diversity. These species are known to occur in other habitat/ecosystem types besides the northern Great Basin.

Small Mammals

In general, the habitat for small mammals within the proposed ACEC is neither unique nor more than locally significant when compared to similar habitat within the northern Great Basin. Also, similar areas of shrub steppe habitat are found on surrounding lands that support the same species diversity. Two species are considered to meet the relevance criteria; only one species is considered to meet the importance criteria because of its special status species and habitat within the proposed ACEC (Table 3).

Pygmy rabbit: one record of occurrence of pygmy rabbit exists within the proposed ACEC boundary, and portions of the proposed ACEC may contain suitable habitat for this species. This area provides much the same habitat, in both quality and quantity, for pygmy rabbit as similar habitats throughout the northern Great Basin.

Its habitat consists of deep friable soils with stands of basin big sagebrush and good grass cover. Species-specific studies or monitoring of this species and the amount of suitable habitat available has not been conducted. It cannot presently be determined whether the habitat available is essential for species survival or maintenance of species diversity.

White-tailed antelope squirrel: a portion of the proposed ACEC may contain some suitable habitat for white-tailed antelope squirrel at certain times of the year. Generally, the antelope squirrel is found at lower elevations and sparser vegetation habitats than that within the proposed ACEC. The range of the white-tailed antelope squirrel is throughout a great deal of the intermountain west and as far south as the tip of Baja California in Mexico.

White-tailed jack rabbit: a portion of the proposed ACEC may contain some suitable habitat for this species, but of unknown amounts as no species-specific studies have been conducted; however, the area is on the edge of the known range of this species. This species ranges throughout much of the intermountain west, as well as northcentral United States.

Preble's shrew: Preble's shrew seems to be found primarily in Oregon, Idaho, and Montana, with a limited range in Nevada. One known record of occurrence exists on the Sheldon National Antelope Refuge in the proposed ACEC boundary; also portions of the proposed ACEC may contain some potential habitat for this species, but of an unknown amount as no species-specific studies have been conducted. At this time, it cannot be determined whether the potential habitat available is essential for species survival or maintenance of species diversity.

Big Game Mammals

Two big game species (pronghorn antelope and California bighorn sheep) meet the relevance and importance criteria. The reasons for this are described below.

Pronghorn antelope: pronghorn antelope are the second most abundant big game species in North America, occupying a vast range across the western United States. Population estimates specific to the entire proposed ACEC are not available. However, a spring 1998 estimate for the two Nevada management units, including the proposed ACEC, was about 6,700 antelope. An estimated 5,000 to 7,000 antelope use the Oregon portion of the proposed ACEC.

Approximately 1,000 to 4,000 of the antelope in the Oregon portion of the proposed ACEC move north onto Big Springs Table, wintering along the Oregon-Nevada State line. During harsh winters with deep snow, many antelope from Nevada and adjoining areas in Oregon move northward near Oregon End Table; animals summering on Hart Mountain move south and east to the Sheldon Refuge and Catlow Valley. During mild winters, pronghorn movement is virtually nonexistent.

This species and its habitat are not considered rare nor unique when compared to other habitats in the northern Great Basin or the western United States. The habitat is similar, in both quantity and quality, to areas immediately adjacent to the proposed ACEC.

In this region, pronghorn antelope habitat consists primarily of Wyoming big sagebrush and low sagebrush (including low sage, black sage, Lahontan sage, and the shorter forms of big sage) with some grassland. A wide variety of plant communities differing in height, composition, and forage production are presently available within and adjacent to the proposed ACEC. Water is sparsely distributed and is present primarily in widely scattered springs and water holes. Their diet consists primarily of forbs and grasses during the spring and early summer, and sagebrush and antelope bitterbrush the rest of the year. Seasonal movements are mainly dictated by snow depth, with deep snows hindering movement and covering the short brush.

Approximately one-third of the Burns and Lakeview pronghorn habitat is also crucial winter range. There are also numerous acres of summer and yearlong habitat available. Within the Winnemucca portion of the proposed ACEC habitat, there is summer, yearlong, and crucial winter habitat. In the Surprise portion of the ACEC there is also summer, and yearlong habitat for pronghorn; though the yearlong habitat is used in winter, no crucial winter range has been identified there. Approximately one-fourth of the pronghorn habitat on the Winnemucca portion of the proposed ACEC is winter habitat. The presence of seasonal antelope habitat meets the relevance criterion.

Antelope populations in northern Washoe County, Nevada increased about 300 percent between the 1960's and early 1990's. Since then, populations have been low, with poor recruitment, in spite of good forage years and mild winters. Oregon populations have declined about 25% since 1991 due to limitations in habitat, severe weather conditions, poor nutrition, disease, and predation. Hart Mountain and Sheldon National Antelope Refuges have experienced population declines despite the removal of livestock grazing and the presence of high quality habitat. A recent study (USFWS, 1997) indicates that coyote predation of kids appears to be the primary factor currently limiting pronghorn populations in the general area. The average doe age is increasing yearly. There is also a risk that another hard winter could set the stage for further significant declines in the population.

In general, antelope habitat conditions in the proposed ACEC are probably the best in this century. Ongoing efforts to improve livestock and wildlife management under existing management plans are increasing the amount of herbaceous forage and water sources available for antelope. Prescribed burning in some habitats previously dominated by tall brush is opening areas up for herbaceous production and access by antelope.

Antelope do not migrate in the classic sense that they follow a set migration pattern or route. Their seasonal movements are determined by annual weather conditions. In severe winters, winter habitat is considered to be a limiting factor. This limiting factor is important to consider in this habitat analysis. The crucial winter habitat is considered to be regionally important or of more than local significance due to the connected nature of the BLM-administered antelope habitat with that on the two adjacent National Antelope Refuges and the seasonal movement patterns of the antelope. Therefore, crucial winter habitat meets the importance criterion (Map 3).

California bighorn sheep: this once nearly extirpated species is now rapidly becoming relatively common in the region. Most sheep populations are due to reintroduction efforts in several areas in the recent past. Over the past 20 years, dozens of bighorn sheep reintroductions have been made in southern Oregon and northern California and Nevada. Much of the historic habitat has been reoccupied. Sheep can be found on McGee Mountain, High Rock Canyon, Massacre Rim, Badger Mountain, Wall Canyon, Dougherty Rim, and other areas. Habitat is characterized as yearlong and totals over 160,000 acres.

Population estimates of bighorn sheep specific to the proposed ACEC are not available. The spring 1998 population estimate for the Nevada management unit that includes the proposed ACEC is about 185 sheep. Other portions of the proposed ACEC possibly support an estimated 325-450 sheep.

California bighorn sheep occupy sagebrush-grassland habitats. Escape areas, lambing areas, thermal protection, rutting areas, and foraging areas are provided by the rugged mountains, canyons, and escarpments. Water, a limiting factor in this area, is supplied by natural sources and big game guzzlers. The primary risk factor to bighorn sheep (domestic sheep grazing) has been eliminated throughout the area.

Bighorn sheep habitat in the proposed ACEC, though typical of the Northern Basin and Range ecosystem and the western United States, and is also similar in both quantity and quality to areas immediately adjacent to the proposed ACEC. However, the U.S. Fish and Wildlife Service consider bighorn sheep to be more than locally significant (letter dated November 3, 1998). Due to the species presence and special status, its habitat is considered to meet both the relevance and importance criteria.

Mule deer: the Nevada Division of Wildlife and Oregon Department of Fish and Wildlife manage deer numbers within separate management areas. The proposed ACEC includes portions of two Nevada management areas. Population estimates for the entire ACEC are not available. However, the spring 1998 population estimate for the two Nevada management areas that include the proposed ACEC is about 9,600 deer, including an estimated 2,700 yearlings. Approximately 2,000 mule deer utilize the Oregon portion of the ACEC.

Mule deer occupy sagebrush-grassland habitats throughout the area. Spring, summer and fall habitat is primarily associated with the Mountain big sagebrush communities at higher elevations in areas. There is yearlong, winter, and winter concentration habitat in the proposed ACEC. Year-long habitat comprises over 500,000 acres; winter habitat totals about 64,250 acres; and winter concentration habitat totals about 7,060 acres. Thermal cover, hiding cover, fawn-rearing, and fawning habitat are presently available within and adjacent to the proposed ACEC.

Deer populations in the area have generally not recovered fully from the 1992-1993 winter die off. Evaluations of the bitterbrush within the primary deer areas indicate that, for the most part, sufficient browse is available for current low populations.

The proposed ACEC contains mule deer habitat that is typical of the Northern Basin and Range ecosystem and the western United States. The habitat is similar in both quantity and quality to areas immediately adjacent to the proposed ACEC. Mule deer are not considered to be more than locally significant. Therefore, the proposed area does not meet the importance criterion with respect to mule deer habitat.

Natural Processes or Systems

This section addresses the relevance and importance criteria as they relate to individual sensitive plant species and in the broader context, rare, unique, or unusual plant communities. For the purposes of this evaluation, a sensitive plant species or unusual plant community is considered to meet the relevance criteria wherever it is found and is considered to be more than locally significant (meets the importance criteria) if the plant or community is rare within the Northern Great Basin or Western United States. This can be determined, in part, by the state or global ranking from the Natural Heritage Program Database. A plant species or community that may be rare within the proposed ACEC area (for example, it is on the edge of its range), but is common or stable elsewhere does not meet this criteria.

- A plant species or community also meets the importance criteria if:

- 1) the plant community rates high when compared to other similar plant communities within the Major Land Resource Area (MLRA). This rating is based on comparing survey data collected by the Ecological Site Inventory (ESI) method.
- 2) the site/plant community has been recognized to be of national importance via a National level special designation, such as a National Conservation Area (NCA) or Traditional Cultural Property (TCP) based at least in part, on the presence of plant/community values.

Sensitive Plants

Table 4 shows the actual occurrence and status of sensitive plant species which were listed in the original ACEC proposal. Some of the plants listed in the proposal are no longer listed as state "Sensitive". Others are not known to occur in the proposal area (Table 5). Table 4 also lists sensitive plants that are known to occur in the proposal area, but were not listed in the proposal. None of the special status plant species that occur within the proposed ACEC are Federally listed as threatened or endangered.

Most of the listed plants which occur in the proposal area also occur outside the area. Most of the plants shown in the table occur within very limited geographic areas within the proposed ACEC boundary and are restricted to specific soils. These soils occur in small areas, which confine the plants to a very limited potential habitat. Therefore, the relevance criteria related to sensitive plants is met on the specific, limited areas where the sensitive plants and the associated soil types occur, but not on the remainder of the proposed ACEC area.

Based on the state or global rankings shown in Table 4, most of these same limited geographic areas are also considered to meet the importance criteria due to the presence of sensitive plant species.

Plant Communities

A number of rare, unusual, or unique plant communities were identified in the original ACEC proposal as being present in the area. In particular, the proposal cites three at-risk natural communities which occur within the proposed ACEC based upon Oregon and Nevada Natural Heritage Program information. These communities were evaluated in this document. In addition, several other representative native plant communities are also addressed in the following section (Table 6) .

At the present time, the Nevada Natural Heritage Program does not track the status of plant communities. The Oregon Natural Heritage Program has identified representative examples of most plant communities within the state and for each community has identified a ranking or prioritizing system (high, medium, low, and unknown categories) that relates to the rarity of each community and the known threats to that community (Oregon Natural Heritage Advisory Council, 1998). This ranking system is used to guide efforts to protect representative plant communities. For the purposes of this evaluation, the plant communities described below are considered to meet the relevance criterion in the localized areas where they occur.

Wyoming Big Sagebrush/Needle-and-Thread/Indian Ricegrass - This plant community exists within the 440-acre Long Draw ACEC/RNA which lies within the boundary of the proposed ACEC. The Oregon Natural Heritage Program (ONHP) lists this community as one to preserve for its natural values. The Natural Areas Committee (**full citation**) considers this area to one of the best sites for that plant community in Oregon's Basin and Range Ecoregion. This plant community meets the importance criteria and was already designated as an ACEC in 1983 (BLM, 1990).

Basin Big Sagebrush/Needle-and-Thread - This community is found in the Sandy 8"-12" Range Site (023XY051NV) the Natural Resources Conservation Service (NRCS) describes as part of Major Land Resource Area (MLRA) 23 portion of the proposed ACEC. The site is found on middle and lower piedmont slopes and old lake terraces that have been covered with sand sheets. This site is found on a few hundred acres of old beach strands in the Massacre Lake and Long Valley areas.

Sandy sites in the North West Great Basin are a common feature of the "bath tub rings" associated with the old Pleistocene lake beds. There are a number of plant communities associated with these sandy sites, but needle-and-thread is one of the most common grass species (the other being Indian ricegrass). The species of sagebrush present is dependant upon the depth of the soil and availability of water.

Table 4. Occurrence of Sensitive Plants within the Proposed ACEC

Species	Status	Occurrence by Administrative Unit				Remarks	Criteria	
		B	L	W	S		Relevant/Important	
<i>Astragalus tiemhii</i> - Tiehm milkvetch	Species of concern.				X	Also in larger numbers outside proposed ACEC. <u>Primary habitat</u> : tufaceous or clay soils associated with hydrothermal alteration.	X	X
<i>Astragalus tetraapterus</i> -	Global list 4; Nevada Natural Heritage List 4.	X					X	
<i>Caulanthus crassicaulis</i> -	Oregon Natural Heritage Database List 4; Global list 4-5; Oregon State list 4.	X					X	
<i>Cryptantha propria</i> - Malheur cryptantha	Oregon State List 4; Global List 4; Oregon Natural Heritage List 4.	X				Occurs on about 500 acres of public land.	X	
<i>Cryptantha schoolcraftii</i> Schoolcraft catseye			X			Larger numbers outside of proposed ACEC. Same habitat as <i>Astragalus tiemhii</i> .	X	X
<i>Cymopteris purpurascens</i> - Purple cymopterus	Oregon State List 2.	X				Occurs on about 500 acres of public land.	X	
<i>Eriogonum crosbyae</i> - Crosby's buckwheat	Oregon Natural Heritage Database List 1; Global List 3; Federal Species of Concern.	X		X		Occurs in same habitat as <i>Astragalus tiemhii</i> and <i>Cryptantha schoolcraftii</i> . Found inside and outside proposed ACEC. In larger numbers in Surprise outside proposed ACEC.	X	X
<i>Eriogonum prociduum</i> - Prostrate buckwheat	Oregon Natural Heritage Database List 1; Global List 3. Federal Species of Concern.	X				Inside and outside proposed ACEC.	X	X
<i>Hackelia cusickii</i> - Cusick stickweed			X			In northeastern California it is relatively common. Not searched extensively in Nevada. Known in 2 sites in northwestern Nevada including 1 in proposed ACEC area. Expected to be relatively common in juniper habitat.	X	
<i>Ivesia rhypara</i> var. <i>rhypara</i> - Grimy ivesia	Oregon Natural Heritage Database List 1; Global list T1.	X				Known from 1 site in Oregon in the proposed ACEC area. Also found in California and Nevada outside of the ACEC area.	X	X

Table 4. Occurrence of Sensitive Plants within the Proposed ACEC continued

Species	Status	Occurrence by Administrative Unit				Remarks	Criteria
		B	L	W	S		Relevant/Important
<i>Mimulus latidens</i> Broad-toothed monkeyflower	Oregon Natural Heritage Data-base List 2; Global list 4; Oregon State list 1.		X			One population.	
<i>Phacelia gymnoclada</i> - Naked-stemmed phacelia		X				Occurs on about 500 acres of public land.	X
<i>Potentilla basaltic</i> - Soldier Mountain cinquefoil	Federal Species of concern.		X			On about 70 acres of alkali meadow and seeps on fine clay soil with and evaporative crust of mineral salts. About 85,000 individuals (1990) occur in 10 subpopulations in Soldier Meadows in an ACEC or proposed ACEC.	X X
<i>Symphoricarpos longiflorus</i> - Long-flowered snowberry		X			X	Widely distributed shrub, from Texas and Colorado to the Yellow Pine belt of California. Associated with dry rocky canyons in this area. Occurs on about 500 acres of public land in Burns District. Also in Lakeview District, but outside proposed ACEC area.	X

State Natural Heritage List Definitions:

- List 1 - Taxa that are endangered or threatened throughout their range.
- List 2 - Species that are threatened, endangered or possibly extirpated from Oregon, but are stable or more common elsewhere.
- List 3 - Species for which more information is needed before status can be accurately determined.
- List 4 - Taxa of concern that are not currently threatened or endangered. Includes taxa that are very rare, but currently secure, as well as taxa that are declining in numbers or habitat but are still too common to be proposed as threatened or endangered.

Basin big sagebrush is associated with the most productive segment of these sandy sites. These sites are well covered with vegetation, and are not known to be particularly sensitive to any disturbance factors at the present time. This plant community does not meet the importance criteria.

Silver Sagebrush/Great Basin Wildrye - This plant community is found as a temporal or seral inclusion in the Loamy Bottom 8"-12" ecological site described by NRCS (023SY009NV). This site is a naturally unstable type found on the fringes of riparian systems in valley bottoms. The predominant character of the Loamy Bottom site is basin big sagebrush/basin wildrye. In areas with slightly higher water tables, basin big sagebrush is replaced by silver sagebrush. As water tables rise, the basin wildrye is replaced by creeping wildrye.

This site is common on the old floodplains of Pole Canyon, where a mosaic of brush and grass species occur on a series of floodplains with a wide variety of water tables. It is also found at the Bitner and Massacre Ranches in fenced meadow complexes and within the Proposed Guano Creek ACEC/RNA in Oregon. This community type meet the relevance criteria at all

Table 5. Plant Species Identified in ACEC Nomination that Are Not Known to Occur in the Proposed ACEC Area or Have No Special Status.

Species	Remarks
<i>Allium campanulatum</i> Sierra onion	No longer on Nevada or Oregon State sensitive lists.
<i>Astragalus porrectus</i> Lahontan milkvetch	Not known to occur in ACEC proposal area.
<i>Caulanthus bamebyi</i> Bameby stemflower	Not known to occur in proposal area.
<i>Dovvingia insignia</i> Cupped downingia	No longer on Oregon State Sensitive list.
<i>Hymenoxys lemmonii</i> Cooper's goldflower	Not known to occur in the proposed ACEC area.
<i>Mentzelia mollis</i> Smooth stickleaf	Not known to occur in the proposed ACEC area.
<i>Sesuvium verrucosum</i> Verrucose sea-purslane	Not known to occur in the proposed ACEC area.

sites. However, it meets the importance criteria only at the Proposed Guano Creek ACEC/RNA site by providing a high priority cell needs for the Basin and Range Ecosystems: *Silver Sagebrush/Great Basin Wildrye* community as identified by the Oregon Natural Heritage Program (Oregon Natural Heritage Advisory Council, 1998).

Other Natural Community Cells - Six other Natural Community cells were identified by the Oregon Natural Heritage Program (ONHP) as occurring within the Oregon portion of the ACEC (Oregon Natural Heritage Advisory Council, 1998). Five areas that include these plant communities were nominated previously for ACEC designation by the ONHP (Vander Schaff, 1992) and have recently been evaluated for relevance and importance criteria in a separate report currently in draft form at the Lakeview District Office (BLM, in prep.). One plant cell identified by the Oregon Natural Heritage Advisory Council (1998) does not occur within the area. These communities and place of occurrence are:

- *Low Sagebrush/Sandberg's Bluegrass Scabland* (Sink Lakes ACEC/RNA)
- *Wyoming Big Sagebrush/Needle and Threadgrass* (Guano Creek ACEC/RNA)
- *Wyoming Big Sagebrush/Idaho Fescue* (Hawk Mountain I and II ACEC/RNAs)
- *Wyoming Big Sagebrush/Bluebunch Wheatgrass* (Hawk Mountain II ACEC/RNA)
- *Low Elevation Vernal Pool* (Sink Lakes ACEC/RNA)
- *Low Elevation Riparian Community* (does not occur in the area)

In summary, the proposed Sink Lakes ACEC/RNA meets the relevance criteria because it includes a rare aquatic ONHP Basin and Range plant cell: *the low elevation vernal pool*, and because it partially fulfills the cell for *low sagebrush/Sandberg's bluegrass scablands*. The proposed Guano Creek ACEC/RNA meets the relevance criteria by providing a high priority cell needs for the Basin and Range Ecosystems: *Big sagebrush/Needle and Threadgrass* and *Silver Sagebrush/Great Basin Wildrye* communities. The Guano Creek area also contains the Bureau sensitive *Eriogonum crosbyae* and *Ivesia rhypara* var. *rhypara*. The proposed Hawk Mountain 1 ACEC/RNA contains the natural area cell need for ONHP Basin and Range

Table 6. Plant Communities Occurring in the Proposed ACEC Area.

Plant Community	Occurrence	Remarks	ACEC Criteria Met
Wyoming Big Sagebrush/Needle-and-Thread/Indian Ricegrass	Burns District	440-acre Long Draw ACEC/RNA.	Relevance and Importance
Basin Big Sagebrush/Needle-and-Thread	Surprise Field Office	Found on a few hundred acres in the Massacre Lake and Long Valley areas.	Relevance
Silver Sagebrush/Great Basin Wildrye	Surprise Field Office and Lakeview District	Pole Canyon, Bitner Ranch, Massacre Ranch, and Guano Creek Proposed ACEC/RNA	Relevance in all locations; importance at Guano Creek Proposed ACEC/RNA only
Low Elevation Vernal Pool	Lakeview District	Sink Lakes Proposed ACEC/RNA	Relevance and Importance
Low Elevation Riparian		Does not occur in the area	
Low Sagebrush/Sandberg's Bluegrass	Lakeview District	Sink Lakes Proposed ACEC/RNA	Relevance and Importance
Wyoming Big Sagebrush/Needle-and-Thread	Lakeview District	Guano Creek Proposed ACEC/RNA	Relevance and Importance
Wyoming Big Sagebrush/Idaho Fescue	Lakeview District	Hawk Mountain I and II Proposed ACEC/RNAs	Relevance and Importance
Wyoming Big Sagebrush/Bluebunch Wheatgrass	Lakeview District	Hawk Mountain II Proposed ACEC/RNA	Relevance and Importance
Culturally Important Plant Communities	Lakeview District	High Lakes Proposed ACEC/TCP	Relevance and Importance

Ecosystems: *Big Sagebrush/Idaho fescue*. The proposed Hawk Mountain 2 ACEC/RNA contains the natural cell need for *Wyoming big sagebrush/Bluebunch Wheatgrass* and *Wyoming Big Sagebrush/Idaho Fescue*. Both proposed Hawk Mountain ACEC areas meet the relevance criteria because they contain a unique diversity of bunchgrasses and they meet the cell needs for the ONHP Basin and Range Ecosystem types.

All of the above proposed ACEC/RNAs meet the importance criteria, as these plant communities represent examples of biodiversity and functioning ecosystems which are at risk in the High Desert grassland ecotype (BLM, in prep.). In addition, individual Conservation Agreements are currently being developed in cooperation with the U.S. Fish and Wildlife Service for *Ivesia rhypara rhypara* and *Erigeron crosbyae*. Their presence within the proposed Guano Creek ACEC/RNA meets the importance criteria.

Culturally Important Plant Communities - The proposed High Lakes ACEC area (south of Hart Mountain to Highway 140) is being considered as both an ACEC and a Traditional Cultural Property (TCP). The area contains a high degree of diversity of cultural plants used by Native Americans. It meets the relevance criteria because of the longevity of the interaction between early Native Americans and the plant communities they traditionally utilize. The diversity of cultural plants in this area and its accessibility contributes to meeting the importance criteria. This remains one of the few areas in the Inter-Mountain west in a condition that can be utilized by the tribal

peoples who used the area before contact with European immigrants. This area meets the importance criteria (BLM, in prep.).

Biodiversity, Endemism, and Ecosystem Integrity

The ACEC proposal focuses mainly on Pronghorn Antelope, but includes other animals, plants, and plant communities in support of the proposal. Each of those individual components has been evaluated in previous sections of this evaluation.

Looking beyond individual species and plant communities and at a broader view of natural processes within the proposed ACEC is required to adequately address issues of biodiversity, endemism, and ecosystem integrity. Biodiversity, endemism, and ecosystem integrity are not natural processes, rather they are commonly used indicators of biological complexity and health within a given geographic area. In simplest terms, biodiversity can be equated with the variety or richness of life (DeLong, 1996). Endemism refers to the distribution of a particular species exclusively within a specific geographic area (USDA and USDI, 1997). Integrity is a reflection of the fact that the biological communities are still intact and dominated by native species with little apparent risk of being converted to communities dominated by non-natives (DeLeo and Levin, 1997).

Biodiversity

Biodiversity is relevant to the cumulative importance of the plant, animal, and community resources within the proposed ACEC. A qualitative approach to evaluation of biodiversity associated with the proposed ACEC at a landscape level is possible with the information available. A more quantitative approach using traditional indices of biodiversity is not possible due to a lack of data on the abundance and distribution of species/communities. These indices have the highest value (greatest biodiversity) when a large number of species each have relatively equal abundance. The indices have lower values when a few species are very abundant or when many species each have low abundance.

The proposed ACEC straddles an extensive lava plateau interrupted by block faults, drainage channels, and standing and collapsed volcanic cones. The thick flows of relatively recent lava mask the typical Great Basin north-south trending mountain ranges (Cronquist *et al.*, 1972). For the most part, the proposed ACEC would lie above the Pleistocene lakes. The predominant vegetation is sagebrush of multiple taxa. Riverine systems and wetlands are minor components on an areal basis when compared to adjacent areas to the immediate east or west. Topographic relief is mostly associated with narrow canyons and small block fault rims, and are relatively minor components when compared to adjacent areas. The structure of the vegetation is generally restricted to a herbaceous layer and a low to mid shrub layer. Trees are mostly absent due to low precipitation, soils, and other environmental factors. The dominance by one shrub genera, and the relative lack of surface water and topographic relief has resulted in a relatively low community biodiversity which is typical of the Northern Great Basin.

The map and tabular data for the Interior Columbia Basin Ecosystem Management Project (USDA and USDI, 1995) also addresses biodiversity within the Oregon portion of the proposed ACEC. The ICBEMP data contains layers of plant and animal

biodiversity and biodiversity hot spots. This data identifies no animal biodiversity polygons or biodiversity hot spots in or near the proposed ACEC. However, there are two plant biodiversity polygons that intersect the proposed ACEC. One covers Guano Valley and the second is a large polygon associated with Steen's Mountain, the Alvord Desert and the Pueblo Range. The large polygon intersects the proposed ACEC along its eastern boundary. Extending the same concept to the Nevada portion of the proposed ACEC would reveal one additional polygon or hotspot that includes large portions of the High Rock Lake watershed and the Mud Meadows area.

Biodiversity of a geographic area is always an important issue, however the question for the evaluation of the proposed ACEC is slightly different: Is the biodiversity of such value that it is important when compared to other sites within the northern Great Basin? Because of the relatively homogenous geology, topography, vegetation, and lack of vertical structure, the biodiversity is not particularly outstanding. Therefore, the biodiversity within the proposed ACEC does not provide additional support for the importance of the entire area.

Endemism

The Hart Mountain Management Plan (USFWS, 1994) defined regional endemism as those species known to occur on the refuge and having greater than 80 percent of their breeding range located within the Great Basin. The plan only examined animal endemism using this definition and identified 10 taxa. Extending this definition to the proposed ACEC area, and only looking at the taxa on BLM lands, there would be 11 taxa of animals. These species can be grouped into three categories, wide spread upland species (n=7), wide spread aquatic species (n=1), and narrowly endemic fishes (n=3).

A second source of endemism information for the portions of the proposed ACEC within Oregon is contained in the map and tabular data for the Interior Columbia Basin Ecosystem Management Project (USDA and USDI, 1995). The ICBEMP data uses endemism more narrowly and focuses on locally rare species. Within the proposed ACEC, two taxa, one mammal and one fish appear in the data set. Extending the ICBEMP approach into the Nevada portion of the proposed ACEC, the size of the polygon for the fish taxa would be increased and one additional fish polygon would be added.

Endemism in plants is not discussed in the Hart Mountain Plan and insufficient data is available to develop a list of endemic plants using the Hart Mountain approach discussed above. The ICBEMP data show one endemic plant polygon in the Guano Valley area (three species) within the proposed ACEC. Extending this narrowly focused approach into the Nevada portion of the proposed ACEC, two additional polygons would be added that encompass the greater High Rock area (three species) and the Mud Meadows hot spring area (one species).

The Guano Valley site consists of a small area of ashy soils in contrast to the surrounding vast areas of soils derived from basalts and other volcanic rocks. The High Rock area includes isolated pockets of weathered ash or altered rhyolite soils. The Mud Meadows area is associated with highly mineralized hot springs. The actual area of all these sites is small.

Endemism is an important consideration within the proposed ACEC. Small areas with multiple rare plant species associated with unique soils occur in several locations. These sites are considered to be relevant and important.

Ecosystem Integrity

The ACEC proposal also mentions landscape level conservation and cites several other proposals/special designations that include Oregon portions of the proposed ACEC. These other proposals include Interior Columbia Basin Management Plan Reserves, the Oregon High Desert Protection Act, and the Hart Mountain Conservation Opportunity Area. All of these proposals relate to the ecosystem integrity within the proposed ACEC.

Ecosystem integrity is not directly related to biodiversity. Communities with high ecological integrity may or may not have high levels of diversity. Integrity has an indirect relationship to biodiversity. If ecosystem integrity is decreased, biological diversity almost always declines. The loss of ecosystem integrity associated with cheatgrass invasion into sagebrush communities is a example in which there is a substantial decline in biodiversity. The recognized degree of ecosystem integrity within the proposed ACEC is a reflection of many factors including relatively high precipitation levels due to the elevation, the lack of large areas of agricultural soils which would have caused more of the area to have been converted to non-native vegetation, and the past and present management actions of the BLM.

Natural Hazards

For the purposes of this evaluation, the following criteria were used to evaluate relevance and importance pertaining to natural hazards:

- 1) Is a natural hazard present?
- 2) Does the area have qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare?
- 3) Does the area pose a significant threat to human life and safety or property?

Portions of the area have a potential for landslides, primarily along a northeast trending line from High Rock Lake to Denio. Slides occur where highly resistant massive volcanic cliff rocks lie above less resistant, highly erosive, volcanoclastic rocks. During times of increased tectonic movements, slippage occurs within the less resistant rocks, and the massive blocks slip down slope. Approximately 30 of these slide prone areas occur in northwest Humboldt County and northern Washoe County (Stewart and Carlson, 1978). Four additional landslide areas have been mapped at McGee Mountain (two), Big Mountain, and west of Knott Creek Ranch. Additionally, two slides occurred immediately outside the proposed ACEC, one at High Rock Lake about 11,800 years ago, and another at Summit Lake approximately between 7,840 and 19,000 years ago (Curry, 1984).

The existing landslide areas do not, in themselves, have substantial significance. However, their existence indicates the potential for landslides to occur in the future

anywhere in the region where there are massive cliffs underlain by weaker rock units. All the existing landslides indicate there is a future potential to block drainages, alter stream courses and landscapes. Considering the remoteness of the region, the likelihood of a landslide occurring where people are present is slim and, therefore, does not pose a significant threat to human life, safety or property.

There are also a large number of cliffs within portions of the proposed ACEC. Numerous cliffs and cracks are associated with faulted lava flows. The potential for rock slides and local flash-flooding exists (Walker and Repenning, 1965). However, there is very little visitor use throughout the proposed ACEC area. The relative risk from these hazards is low because of the relative remoteness and lack of human habitation and congregation in the area.

Fisher Hot Springs is located on the western edge of the proposed ACEC, just south of Hart Mountain. This hot springs emanates from the base of a faulted lava flow; 154 degrees Fahrenheit water flows across the surface of the ground. Because of the increasing interest in hot springs by the public for soaking/bathing, this localized feature represents a potential significant natural hazard and, therefore, is considered to meet the relevance and importance criteria in this localized area.

Special Management Requirements

Cultural Values

In general, these sites are protected by the National Historic Preservation Act of 1966, as amended, and the Archaeological Protection Act of 1969. BLM policy requires that current management activities comply with these laws. Existing land use plans incorporate or tier to these existing laws/policies, providing leverage for protection needs. It has been recognized that many of the cultural sites in the area are being or have been vandalized in the past, including rock art sites. Artifact collection and digging has been, and continues to be, a problem.

Two cultural resource management plans (CRMPs) (BLM, 1983c; 1985) have been prepared for the High Rock and Massacre Bench areas. Projects have already been implemented, including fencing of sensitive archaeological sites. There is an existing proposal to study a 49,000-acre ACEC on the Massacre Bench to protect important archaeological resources in that area. The *Soldier Meadows Activity Plan* and the *Sonoma-Gerlach and Paradise-Denio Management Framework Plan Amendment* also include protective measures for the Applegate-Lassen Trail and other cultural resources within the proposed ACEC area boundary (BLM 1998a; BLM 1998c).

A portion of the Applegate\Lassen Trail is located within the proposed ACEC boundary. A one mile corridor along the Applegate-Lassen Trail is already protected by listing on the National Register of Historic Places. The existing 24,000-acre High Rock Canyon ACEC was designated, in part, to protect the Applegate/Lassen trail corridor and the physical remains associated with the trail. The Applegate/Lassen Trail and eligible sites in the Soldier Meadows area are also currently being addressed in the proposed Soldier Meadows ACEC expansion and the Black Rock Desert ACEC

proposal, just outside of the Pronghorn ACEC proposal boundary (BLM, 1998a; 1998c).

The Clovis site and stemmed point sites are concentrated in small, specific geographic areas and are not dependent upon a large ACEC designation for adequate protection.

The area of rock art concentration has already been proposed by BLM staff for protection as either an ACEC (High Lakes ACEC), Traditional Cultural Property (TCP), and/or a National Register District. This area, much smaller in size than the Pronghorn proposal, is currently being considered under a separate ACEC evaluation process (BLM, in prep.). These sites in particular may be in need of special protection. These sites are considered sacred to Native Americans.

Designation of any or all of the proposed (smaller) ACECs described above will also be accompanied by the preparation of special management plans at some point in time in the future. These plans will address the special management needs for cultural resources in those specific locations. In particular, the proposed High Lakes ACEC should be managed for protection of cultural resources over other uses.

Scenic Values

No additional special management is needed to protect the existing, high-quality (Class A) scenic values within the proposed ACEC area. Existing management plans and policy are considered adequate protection for these limited scenic values.

The high scenic values within the existing High Rock Canyon ACEC were one reason for its ACEC designation and subsequent special management direction (BLM, 1987).

The other remaining area containing high scenic values (Lahontan Cutthroat Trout Natural Area) is currently in WSA status and is already protected under the Wilderness Interim Management Policy (BLM, 1995). This area is currently being managed to VRM Class I standards (most protective class) until such time as Congress designates the area as wilderness or releases it from wilderness study.

Fish and Wildlife Resources

Existing Law and Policy

It is BLM policy to manage public lands to recover, protect, and conserve Federally listed species, species that are proposed or candidate for listing, and locally sensitive species for which adverse conditions should be avoided. The Endangered Species Act (ESA) creates a non-discretionary, legally binding obligation on the part of the BLM to use all its authorities to:

1. Implement programs that will bring about recovery of listed species and the ecosystems upon which they depend;

2. Ensure that any action authorized, funded or implemented by the BLM is not likely to jeopardize the continued existence of any listed species or result in the adverse modification or destruction of critical habitat.

BLM policy also requires management of Federal and State non-listed candidate or sensitive species on public lands to stabilize and increase populations to eliminate the need for listing by early conflict identification, protection and enhancement.

Additional protective measures within wilderness study areas are provided under the Wilderness Final Environmental Impact Statement (BLM 1989) and Wilderness Interim Management Policy (BLM 1995). Existing land use plan direction tiers to the requirements of these laws, policies, and previous EISs.

Existing Management Plans

Within the Burns portion of the ACEC, the *Pueblo-Lone Mountain Allotment Management Plan* (BLM, 1995) contains adequate management direction to protect the relevant/important wildlife values present. Under the recently proposed *Southeastern Oregon Draft Resource Management Plan* direction (BLM, 1998b), the Burns District portion of the area would be managed as a right-of-way avoidance area, vehicles would be limited to existing roads, and the area would be managed under VRM class II, even if WSA status is dropped.

Within the Lakeview District portion of the area, the *Warner Lakes Management Framework Plan* (BLM, 1983a), *Lakeview Grazing Management FEIS and ROD* (BLM, 1982a; 1982b), *Hillcamp and O'Keeffe Individual Allotment Management Plans* (BLM, 1975; 1994b) and the *Beaty Butte Allotment Management Plan* (BLM and USFWS, 1998b) provide adequate management direction to protect the relevant/important wildlife values. Each AMP contains specific vegetation management objectives, grazing systems, and planned actions to provide periodic rest periods from livestock grazing and improvement of wildlife habitat conditions. This area does not need additional special management to support the diverse wildlife resources common to the area, above that already described in these plans.

Within the Surprise Field Office portion of the proposed ACEC, numerous activity plans, including nine AMPs, two CRMPs, five wild horse herd management plans, and one habitat management plan have been prepared and are being implemented under the broader guidance of the *Cowhead/Massacre Management Framework Plan* (BLM, 1983). Each activity plan contains specific goals/objectives and specifies actions designed to meet the goals/objectives within a specific area. The implementation of these plans provides adequate management prescriptions to protect and manage the important fish, wildlife, and other resource values/uses within a vast majority of the area under consideration.

Standards for Rangeland Health have been developed and are in the process of being implemented in all states (BLM, 1997a; 1997b; 1998d). These standards are expressions of the physical and biological condition or degree of function necessary to sustain healthy rangeland ecosystems, including fish and wildlife species and their habitats. The standards are the basis for assessing and monitoring rangeland condition and trend over time. Assessments identify the condition or degree of function within the rangeland ecosystem and indicate resource problems and issues

that should be addressed. The authorized officer is required to take appropriate action as soon as practicable, but not later than the start of the next grazing year upon determining, through assessment or monitoring, that a standard is not being achieved and that livestock are a significant contributing factor to the failure to achieve the standards.

Rangeland Standards and Guideline Assessments have recently been completed for the Beaty Butte and O'Keeffe Individual allotments in Oregon (BLM and USFWS, 1998b; BLM, 1999). The O'Keeffe assessment concluded that existing grazing management practices promoted achievement of significant progress towards meeting the rangeland standards and are in conformance with the rangeland guidelines. The Beaty Butte assessment identified one problem area where livestock grazing practices were responsible for not meeting the riparian standards along Guano Creek. However, it noted that implementation of the jurisdictional transfer with the Hart Mountain National Antelope Refuge and the *Beaty Butte AMP/ROD* (BLM and USFWS, 1998b) would correct the problem by exclusion of grazing along the creek.

Based on the existence of all of the existing wildlife management direction described herein, additional special management direction is deemed unnecessary at this time. However, additional management direction can always be considered, if a problem should arise, in the upcoming Lakeview RMP, in future coordinated resource management plans, or in future allotment/multiple use activity level management plans.

Evaluation notes concerning existing special management for applicable individual species are provided below.

Fish and Amphibians

Alvord Chub: Any special management needed in the future for the Alvord chub could be addressed through an Allotment Multiple Use Decision or Recreation Activity Management Plan.

Desert Dace: Special management is already in effect to protect desert dace in their range on public lands as follows:

- Critical habitat has been designated.
- More than 2,000 acres of desert dace habitat have been purchased by the federal government and are managed by the BLM. The Soldier Meadow Ranch has retained the water rights on the purchased lands, but has entered into a water management plan with BLM that discontinues water diversions and other water uses other than livestock watering on the land purchased. An additional 5,150 acres of dace habitat on private land owned by the Soldier Meadow Ranch are under a conservation easement to protect that habitat
- The *Soldier Meadow Allotment Multiple Use Decision* (BLM, 1994a) protects habitats from adverse impacts of livestock and wild horse and burro grazing.

- The *Soldier Meadow Activity Plan* (BLM, 1998a) designates management actions (including law enforcement, visitor/recreation management, public access control, information/education program development, livestock grazing, special status species, cultural resource, and minerals management, and resource/management research) to protect desert dace habitats on public lands from adverse impacts from recreation and off highway vehicle use and minimize adverse impacts from other resource uses.
- Protective measures are being taken under the existing land use plan. A plan amendment (BLM, 1998c) is also in the process of being adopted to further protect the species.

Currently, adequate areas of suitable habitat have been retained, and the existing populations seem to be tolerant of past disturbances.

Sheldon tui chub: The one known location on the Surprise Resource Area is in an enclosure to protect the fish and other resources. No additional special management is needed for this species. The Sheldon tui chub habitat in the Lakeview portion of the area is comprised of intermittent streams.

Bird Species

There are no special or additional management needs identified for any bird species, including sage grouse in the proposed ACEC area. Management needs for these species are sufficiently addressed in existing plans (USFWS 1994; BLM, 1994a; 1994b; BLM and USFWS 1998b). The Oregon Department of Fish and Wildlife and U.S. Fish and Wildlife Service believe that existing management plans and practices in the area are adequate to protect sage grouse and other wildlife species (letters dated September 3, 1998 and November 3, 1998).

Sage Grouse: Sage grouse habitat in the area is not threatened by current management, nor is the management direction identified in existing plans expected to contribute towards the potential listing of this species under the Endangered Species Act. As a matter of policy, the BLM avoids any action that may contribute to the need to list a candidate or sensitive species.

Management within the Lakeview District is expected to enhance sage grouse and other sagebrush steppe habitats over time through the implementation of the Beaty Butte AMP/ROD (BLM and USFWS, 1998b). This includes the development of water sources, better control of the season, timing, and duration of livestock grazing (including the exclusion of grazing in sensitive riparian areas), and the use of prescribed burning to create a mosaic of habitats. The U.S. Fish and Wildlife Service agrees that this plan adequately addresses the needs of sage grouse in this area (letter dated November 3, 1998). However, the Nevada Division of Wildlife does express concern over the increased use of prescribed fire in the general area and the potential impacts on sage grouse habitat (letter dated March 22, 1999).

The proposed ACEC is located in portions of three grazing allotments administered by the Winnemucca Field Office. Final Multiple Use Decisions (FMUD) were issued for both the Soldier Meadows and Alder Creek Allotments in January 1994 (BLM, 1994a;

1994b). The Knott Creek Allotment is scheduled for evaluation in late Fiscal Year 1999 or early Fiscal Year 2000. The FMUDs contain provisions to control existing livestock, wild horse, and burro grazing to enhance sage grouse habitat. Additional special management prescriptions are not necessary at this time. Any habitat protective/enhancement measures identified in the future which are additional to those in existing FMUDs could be identified during the Allotment Evaluation process and addressed through an Allotment Multiple Use Decision, Recreation Activity Management Plan, or other activity level plan.

Within the Surprise portion of the area, no additional special management is required for sage grouse. Prescriptive grazing and road closures have been implemented at the Bitner Ranch for management of sage grouse brooding habitat. Prescriptive grazing and prescribed burning have been implemented at Massacre Ranch. These two sites have the largest areas of potential brooding habitat within the Surprise portion of the proposed ACEC.

Big Game Mammals

There are no special or additional management needs for any big games species (including pronghorn antelope, bighorn sheep, or mule deer) in the proposed ACEC area. Management needs for these species are sufficiently included in existing plans. The Oregon Department of Fish and Wildlife and U.S. Fish and Wildlife Service believe that existing management plans and practices in the area are adequate to protect pronghorn antelope and other wildlife species (letters dated September 3, 1998 and November 3, 1998).

Pronghorn Antelope: The proposed ACEC is located in portions of three grazing allotments administered by the Winnemucca Field Office. Final Multiple Use Decisions (FMUD) were issued for both the Soldier Meadows and Alder Creek Allotments in January 1994 (BLM, 1994a; 1994c). The Knott Creek Allotment is scheduled for evaluation in late Fiscal Year 1999 or early Fiscal Year 2000. The existing FMUDs contain provisions to control livestock, wild horse, and burro grazing to enhance pronghorn habitat. Additional special management prescriptions are not necessary at this time. If additional protective measures are necessary, over and above those identified in the existing FMUDs, to enhance a component of pronghorn, bighorn sheep, or mule deer habitat, they will be addressed during the Allotment Evaluation process.

The *Beaty Butte Allotment Management Plan* (BLM and USFWS, 1998b) and recently enacted legislation to transfer jurisdiction of lands between the BLM and Hart Mountain National Antelope Refuge also provided for the exclusion of livestock grazing on approximately 20,000 acres of crucial pronghorn antelope fawning habitat south of the refuge (Guano Creek WSA/proposed ACEC). The U.S. Fish and Wildlife Service agrees that this plan adequately addresses the needs of pronghorn antelope in this area (letter dated November 3, 1998). The Oregon Department of Fish and Wildlife believe that proper livestock grazing management is compatible with, and can even enhance antelope habitat (letter dated September 3, 1998). However, the Nevada Division of Wildlife does express concern over the increased use of prescribed fire in the general area and the potential impacts on antelope habitat (letter dated March 22, 1999).

Natural Processes or Systems

The implementation of the laws and policies related to sensitive species and Standards for Rangeland Health (BLM, 1997a; 1997b; 1998d; 1999; BLM and USFWS, 1998b) described in the fish and wildlife section also applies to, or addresses the protection of, sensitive plants and native plant communities. Except as described in the specific locations below, most the proposed Pronghorn ACEC area does not warrant special management for sensitive plant species or plant communities.

Sensitive Plants

Astragalus tiehmi and Cryptantha schoolcraftii: Mineral development could threaten significant portions of the habitat occupied by these species. A withdrawal from mineral entry would be required to prevent such loss, although at the present time, there is no known, foreseeable mining threat. The current land use plan does not provide for a mineral withdrawal to protect these species.

Eriogonum crosbyae and Ivesia rhypara rhypara: A Conservation Agreement is currently being written by the BLM and the U.S. Fish and Wildlife Service to preserve and study these species' entire populations. A Conservation Agreement already exists in Malheur County for those populations; however, the new agreement will contain all of the other known sites in Oregon, Nevada, and California. This agreement will identify potential threats to these species, monitoring needs, and recommend appropriate management to ensure species viability.

The *Beaty Butte Allotment Management Plan* (BLM and USFWS, 1998b) and recently enacted legislation to transfer jurisdiction of lands between the BLM and Hart Mountain National Antelope Refuge also provides for the exclusion of livestock grazing along Guano Creek where these two species are found.

Eriogonum prociduum: This species is not currently part of a Conservation Agreement and may need to be evaluated in the future. Potential threats to this species have not been identified.

Potentilla basaltica: Potential threats to the Soldier Meadows cinquefoil include habitat modification due to agricultural diversions, trampling and overgrazing by livestock and wild horses/burros, recreational use, and competition from invading non-native species (Russian olive).

Currently, approximately 35 percent of the population of Soldier Meadows cinquefoil in Soldier Meadow is included in the designated Soldier Meadows Desert Dace Area of Critical Environmental Concern. This area encompasses approximately 307 acres of public land surrounding desert dace habitat and is also designated as a Research Natural Area (RNA). Soldier Meadows cinquefoil was not described until after the ACEC and RNA were designated. Therefore, protection on public lands does not directly address this rare plant, only the threatened fish.

In addition to the above special management designation, the *Soldier Meadow Activity Plan and Environmental Assessment* (BLM, 1998a) is in the process of being finalized. The purpose of this plan is to:

- Address impacts to special status species and cultural resources from increased recreation, livestock, wild horse and burro grazing, and potential geothermal and mineral development.
- Implement management actions to provide favorable habitat conditions for the desert dace, that will enable the U.S. Fish and Wildlife Service to delist the species in accordance with the Endangered Species Act.
- Implement management actions to protect habitat for basalt cinquefoil, so that the U.S. Fish and Wildlife Service will not need to list the species.
- Implement management actions to protect cultural resources in the area from further degradation.

Specific recommended actions included in this plan to address management of Soldier Meadows cinquefoil habitat are as follows:

- Expand the existing Soldiers Meadows Desert Dace ACEC and RNA to include all public lands in the Soldier Meadows basin (approximately 35,340 acres). This would include all known habitat for the Soldier Meadows cinquefoil within the Soldier Meadows basin. This action would require an amendment to the existing land use plan.
- Institute specific management actions for basalt cinquefoil based on inventory and monitoring data. Develop a conservation agreement for the species with the U.S. Fish and Wildlife Service.
- Recommend a withdrawal for all locatable minerals on all public lands in the Soldier Meadows special status species habitat area, approximately 3,545 acres. This action would require an amendment to the existing land use plan.
- Permit development of mineral materials within the expanded Soldiers Meadow Desert Dace ACEC/RNA for road maintenance or other uses by Soldier Meadows Ranch, BLM and Humboldt County. Permit sales to other publics on a case-by-case basis, as long as special status species will not be impacted.
- Identify specific resource and interdisciplinary research for resources in the area which include basalt cinquefoil life history, ecology, and effect on populations and habitat by management actions.
- Close roads directly impacting stands of basalt cinquefoil.
- Continue livestock grazing in accordance with the Soldier Meadows Multiple Use Decision (MUD). Adjust grazing if impacts, determined through studies and monitoring, are shown to be detrimental to special status species habitats.

The specific actions mentioned above that could require amendments to the existing land use plan are currently being addressed in the *Sonoma-Gerlach and Paradise-*

Denio Management Framework Plan Amendment and Draft Environmental Impact Statement for the Management of the Black Rock Desert (BLM, 1998b). This document was sent to the public for comment on September 16, 1998.

Plant Communities

Wyoming Big Sagebrush/Needle and Thread/Indian Ricegrass: The Long Draw ACEC/RNA was previously proposed to be fenced, but this was deemed unnecessary since the livestock management was changed to winter use only. This change removed the need for a fence to protect this plant community. Uncontrolled off-road vehicle use or poor livestock grazing practices have the potential to cause adverse changes in the plant community within this ACEC. However, the current plan allows for additional protective measures to be initiated if ACEC values are threatened by other factors in the future (BLM, 1990).

Basin Big Sagebrush/Needle and Thread: Protective measures have already been implemented through the implementation of existing management plans and the Rangeland Standards and Guidelines. No additional special management is required at this time or envisioned in the future.

Silver Sagebrush/Great Basin Wildrye: Extensive prescribed burning has been conducted within this community to restore a balance of grasses and shrubs. Additionally, the High Rock Canyon ACEC and the meadows at Massacre and Bitner Ranches are not part of a normal grazing system.

Grazing has recently been removed from the Guano Creek WSA/proposed ACEC via legislation completed in 1998 authorizing a jurisdictional transfer of lands between the Lakeview District, BLM and the Hart Mountain National Antelope Refuge.

As described in the previous section, this plant community type fluctuates with the local water table. The main environmental influence on this community type is natural water flow/water table levels. Therefore, no additional special management is needed at this time or envisioned in the future to protect this community.

Other Plant Community Cells: Management direction for the five other native plant community cells identified by the Oregon Natural Heritage Program (*low elevation vernal pool, low sagebrush/Sandberg's bluegrass, Wyoming big sagebrush/needle and threadgrass, Wyoming big sagebrush/Idaho fescue, and Wyoming big sagebrush/bluebunch wheatgrass*) will likely need to be modified in the future to preserve the relevant and important plant community values found there. The areas containing these plant communities have already been identified for four separate potential ACEC/RNA designations (Guano Creek, Sink Lakes, and Hawk Mountain I and II) and have been analyzed through a separate evaluation process (BLM, in prep.).

The existing land use plan (BLM, 1982a; 1982b; 1983) does not address ACEC designation or provide protective management for most of these plant communities. As mentioned above, grazing has recently been removed from the Guano Creek WSA/proposed ACEC via legislation completed in 1998 authorizing a jurisdictional transfer of lands between the Lakeview BLM and the Hart Mountain National Antelope

Refuge. Special management needs for these four proposed ACEC areas will be addressed through the upcoming Lakeview RMP process.

Culturally Important Plant Communities: Currently, the proposed High Lakes ACEC does not receive heavy, competing uses from hunters, other recreationists, or livestock. However, increases in these uses in the future could impact the native plant communities of interest to tribal people. The BLM has a trust obligation with tribal people to protect these values. Future management direction for this area will likely emphasize tribal cultural plants. Special management needs for this proposed ACEC will be addressed through the upcoming Lakeview RMP process.

Biodiversity, Endemism, and Ecological Integrity

With respect to preserving biodiversity, no identified special management actions were identified beyond those already discussed for individual species and plant communities.

Endemism is an important consideration within the proposed ACEC. Small areas with multiple rare plant species associated with unique soils occur in several locations. These types of sites often require specialized management actions to prevent their loss. The individual species narratives discuss these needs in greater detail and, in most cases, the sites noted for their contribution to endemism are currently managed under ACEC designation or have already been proposed by the BLM for ACEC designation. Several fish taxa also have been previously discussed as important. The narratives also note the existing actions designed to protect the habitat and populations of these species. Therefore, no additional special management actions are needed to directly support endemic populations.

The recognized degree of ecosystem integrity within the proposed ACEC makes it an important factor for maintaining natural processes for the area. Maintenance of ecosystem integrity requires that management actions recognize the impacts to individual plant and animal species, as well as, plant communities and their distribution across the landscape. These types of actions were discussed in the individual species and plant communities narratives. No additional special management actions have been identified that would be required to support maintenance of ecosystem integrity.

Natural Hazards

No special management is needed nor is feasible for any natural hazards located throughout the proposed ACEC area.

Statement of Findings

In conclusion, there are a number of discrete areas (Map 2) within the proposal that meet the criteria to be further considered as potential ACECs through the land use planning process. These are:

- Expansion of the Soldier Meadows Desert Dace ACEC within the Winnemucca Field Office to about 35,340 acres (existing ACEC is 307 acres). This is already being addressed in the *Sonoma-Gerlach and Paradise-Denio Management Framework Plan Amendment and Draft Environmental Impact Statement for the Management of the Black Rock Desert* (BLM, 1998c).
- High Lakes Proposed ACEC in the Lakeview District (about 37,112 acres). This is currently being addressed in a separate ACEC evaluation process (BLM, in prep.).
- Sinks Lakes Proposed ACEC in the Lakeview District (about 2,320 acres). This is currently being addressed in a separate ACEC evaluation process (BLM, in prep.).
- Guano Creek Proposed ACEC in the Lakeview District (about 1,640 acres). This is currently being addressed in a separate ACEC evaluation process (BLM, in prep.).
- Hawk Mountain #1 Proposed ACEC in the Lakeview District (about 1,920 acres). This is currently being addressed in a separate ACEC evaluation process (BLM, in prep.).
- Hawk Mountain #2 Proposed ACEC in the Lakeview District (about 5,295 acres). This is currently being addressed in a separate ACEC evaluation process (BLM, in prep.).

In addition, the Massacre Bench area in the Surprise Field Office was previously recommended as a proposed ACEC; however, no formal evaluation has been completed to date. An evaluation of that proposal would need to be completed prior to consideration in a land use plan revision or amendment.

The Next Step

As described in the public involvement section, this ACEC evaluation document will be made available to the public, other agencies, tribal governments, and resource advisory councils on a request basis. It will also soon be available on the Lakeview District website at <http://www.or.blm.Lakeview/>.

The findings presented herein do not represent a final decision of the BLM that is either protestable or appealable at this point in time under 43 CFR parts 4 or 1610. These findings may be protested (under 43 CFR part 1610) at the point in time where the BLM issues a formal decision to designate an ACEC (at the conclusion of the land use planning process) or should the BLM issue a notice/decision that ACEC designation is not warranted and no formal plan amendment process will occur.

To officially designate those portions of the area found to meet the criteria, a land use plan or plan amendment must be prepared to delineate the official boundary and to specify the special management direction needed to protect the relevant/important resource values. Each BLM office will be responsible for pursuing ACEC designation

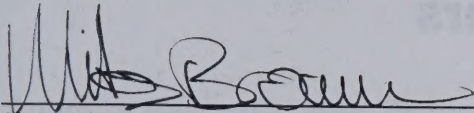
for those portions within their respective administrative jurisdictions. The implementation schedule for pursuing ACEC designation depends on future availability of planning funds and the land use planning workload priorities within each state.

Only portions of the Pronghorn ACEC nomination were found to meet the criteria and warrant further consideration for designation. The *1613 Manual* (BLM, 1988) provides for the option of specifying interim management direction to protect sensitive resources or ecosystem function until such time as the land use planning process can be completed (which deals with designation and identifying special management direction). We have determined that no special interim management direction is required at this time. Current management is adequate or flexible enough to protect the relevant/important values present until the land use planning process(es) can be completed. There are no known immediate threats from mining, energy development, rights-of-way, rangeland developments. Livestock grazing, as presently managed, is either not a known threat or can be adjusted, if needed, under current plans to protect the relevant/important values.

For those lands in the Lakeview District, the results of this ACEC evaluation will also be made available to the public as part of public scoping for the upcoming Resource Management Plan. The findings will be summarized within the *Analysis of the Management Situation* (AMS) document to be prepared in late calendar year 1999. A decision regarding the lands within the Burns District will likely be made through the *Southeastern Oregon Resource Management Plan and Record of Decision* expected to be completed later this year. Lands within California and Nevada BLM jurisdictions would most likely require designation through a plan amendment process.

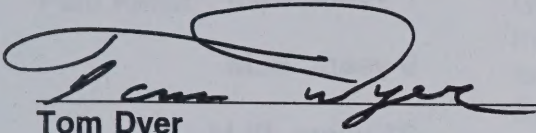
Although formal comments are not requested at this time, any future land use planning process addressing this area will provide an opportunity for the public to provide comments on the findings of this evaluation. A decision to not designate part, or all of the proposed area as an ACEC does not require the preparation of a plan amendment and is exempt from NEPA. However, any party adversely affected by a subsequent decision to designate or not designate part, or all, of the proposed area as an ACEC will have an opportunity to protest in accordance with 43 CFR part 1610 at the point in time the decision is proposed.

Signature Page



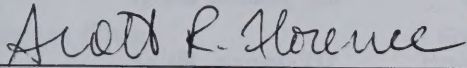
Miles Brown
Field Manager
Andrews Resource Area
Burns District

5/10/99
Date



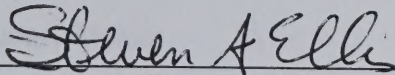
Tom Dyer
District Manager
Burns District

5/10/99
Date



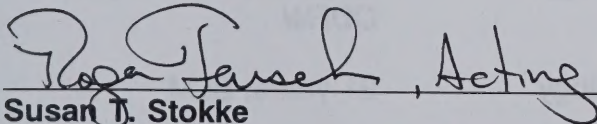
Scott R. Florence
Field Manager
Lakeview Resource Area
Lakeview District

5/7/99
Date



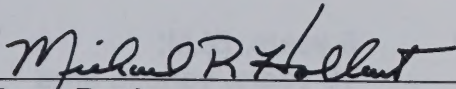
Steven A. Ellis
District Manager
Lakeview District

5/14/99
Date



Susan T. Stokke
Field Manager
Surprise Field Office

5/13/99
Date



Terry Reed
Field Manager
Winnemucca Field Office

5/12/99
Date

Acting
for

List of Preparers

<u>Name</u>	<u>Discipline/Field</u>	<u>Experience</u>
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Winnemucca Field Office, Nevada

Arn Berglund	Wildlife Biology	7 years, BLM
Mike Bilbo	Visual Resources	9 years, BLM
Rodger Bryan	Wildlife Biology	21 years, BLM
Delores Cates	Geology/Minerals	11 years, BLM
Pete Christensen	Document Review	29 years, BLM
Wendy Fuell	Range Management/ Botany	10 years, BLM
Peggy McGuickan	Cultural Resources	21 years, BLM
Gerald Moritz	Planning/ Environmental Coordination	25 years, BLM

Lakeview Resource Area, Lakeview District, Oregon

Vern Stofleth	Wildlife Biology	12 years, BLM; 2 years ODFW
Alan Munhall	Aquatic Biology	21 years, BLM
Walt Devaurs	Wetland Biology	20+ years, BLM
Trish Lindaman	Visual Resources	13 years, BLM
Lucile Housley	Botany/Ethnobotany	6 years, BLM; 16 years, various area Universities
Bill Cannon	Cultural Resources	25 years, BLM; 5 years Field schools/contract work in Great Basin
Scott Florence	Field Manager/ Document Review	23 years BLM

Paul Whitman	Planning/ Environmental Coordination	6 years, BLM; 7 years, Army Corps of Engineers
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Andrews Resource Area, Burns District, Oregon

Miles Brown	Field Manager/Document Review	18 years, BLM
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Pam Keller	Geographic Information System and Mapping Support	10 years, BLM
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Rick Hall	Botany/ACECs	23 years, BLM
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Guy Sheeter	Wildlife Biology	31 years, BLM
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Carolyn Chad	Range Management	8 years, BLM
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Surprise Field Office, California

Roger Farschon	Planning/Ecosystem Function	21 years, BLM
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Susan Stokke	Field Manager/Document Review	4 years, BLM; 18 years, Forest Service
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Hugh Bunten	Cultural Resources	12 years, BLM; 10 other agencies
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






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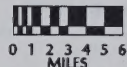
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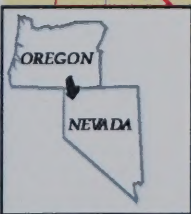
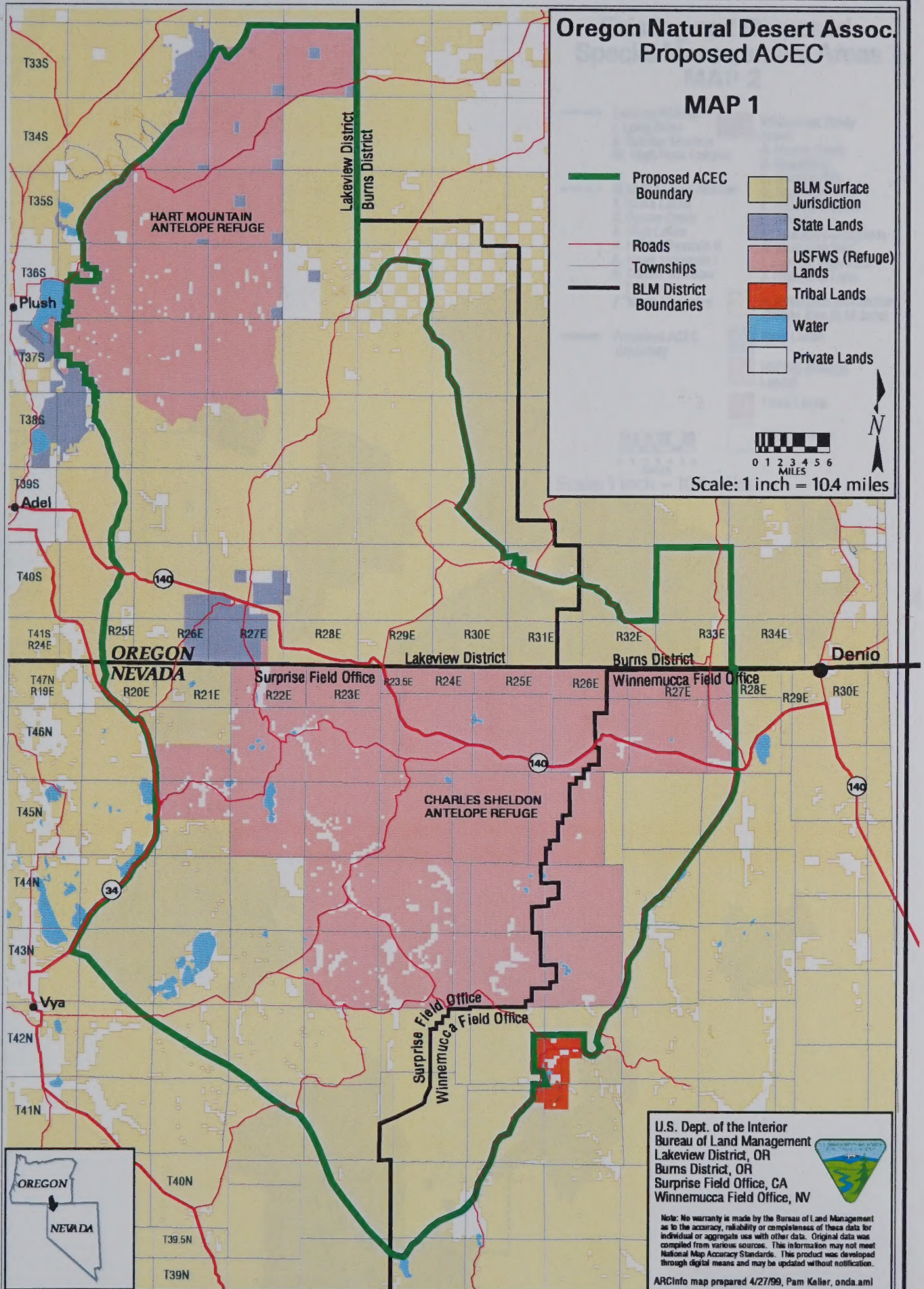
Oregon Natural Desert Assoc. Proposed ACEC

MAP 1

-  Proposed ACEC Boundary
-  BLM Surface Jurisdiction
-  State Lands
-  Roads
-  Townships
-  BLM District Boundaries
-  USFWS (Refuge) Lands
-  Tribal Lands
-  Water
-  Private Lands



Scale: 1 inch = 10.4 miles



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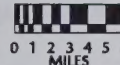


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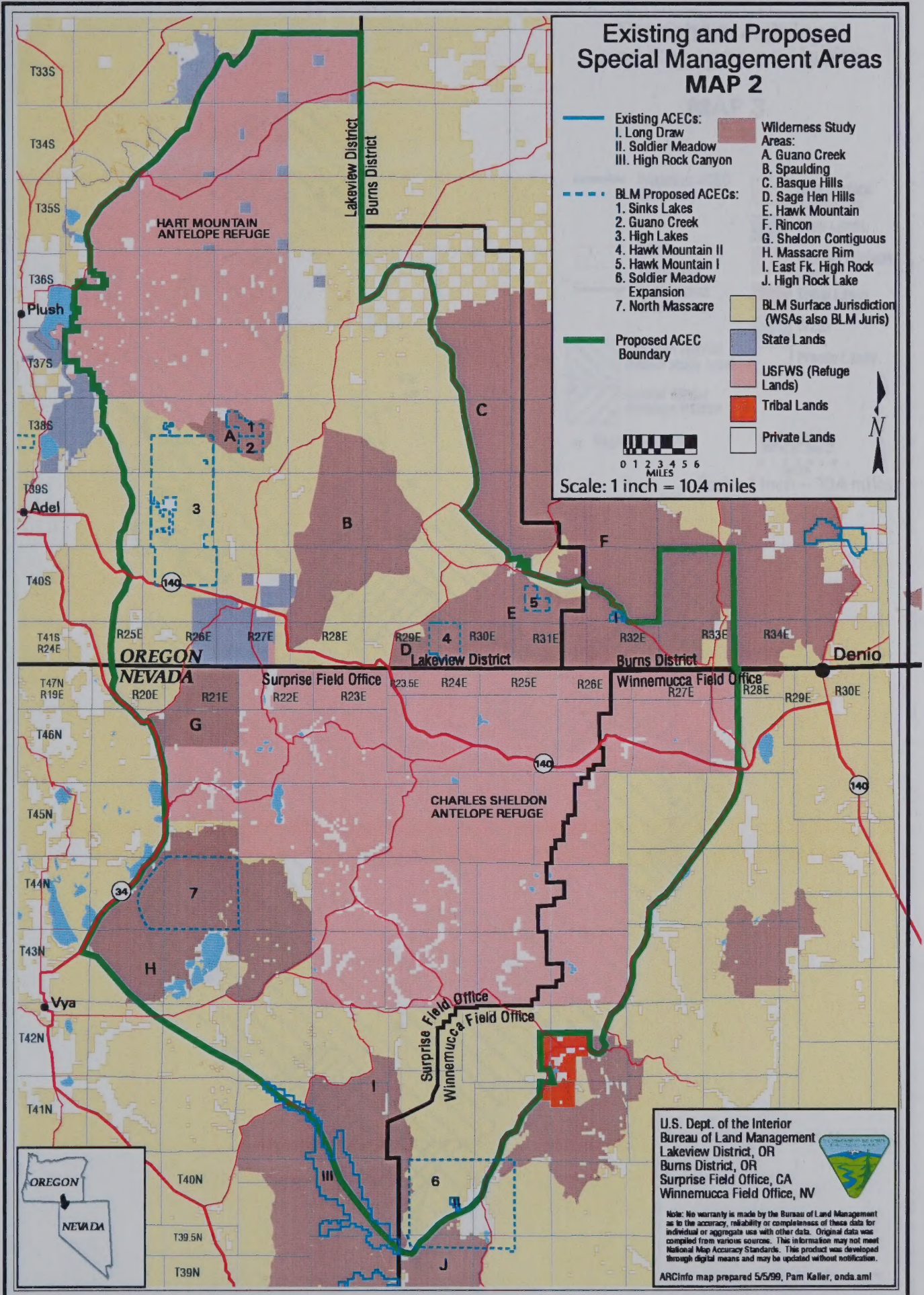
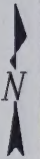
ARCInfo map prepared 4/27/99, Pam Keller, onda.ami

Existing and Proposed Special Management Areas MAP 2

- | | |
|---|--|
| Existing ACECs:
I. Long Draw
II. Soldier Meadow
III. High Rock Canyon | Wilderness Study Areas:
A. Guano Creek
B. Spaulding
C. Basque Hills
D. Sage Hen Hills
E. Hawk Mountain
F. Rincon
G. Sheldon Contiguous
H. Massacre Rim
I. East Fk. High Rock
J. High Rock Lake |
| BLM Proposed ACECs:
1. Sinks Lakes
2. Guano Creek
3. High Lakes
4. Hawk Mountain II
5. Hawk Mountain I
6. Soldier Meadow Expansion
7. North Massacre | BLM Surface Jurisdiction (WSAs also BLM Juris)
State Lands
USFWS (Refuge Lands)
Tribal Lands
Private Lands |
| Proposed ACEC Boundary | |



Scale: 1 inch = 10.4 miles



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Surprise Field Office, CA
Winnemucca Field Office, NV



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Existing and Proposed Special Management Areas MAP 2



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Washington, D.C. 20250

Map 2
Existing and Proposed
Special Management Areas














Map 2
Existing and Proposed
Special Management Areas

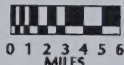
Map 2
Existing and Proposed
Special Management Areas



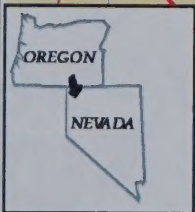
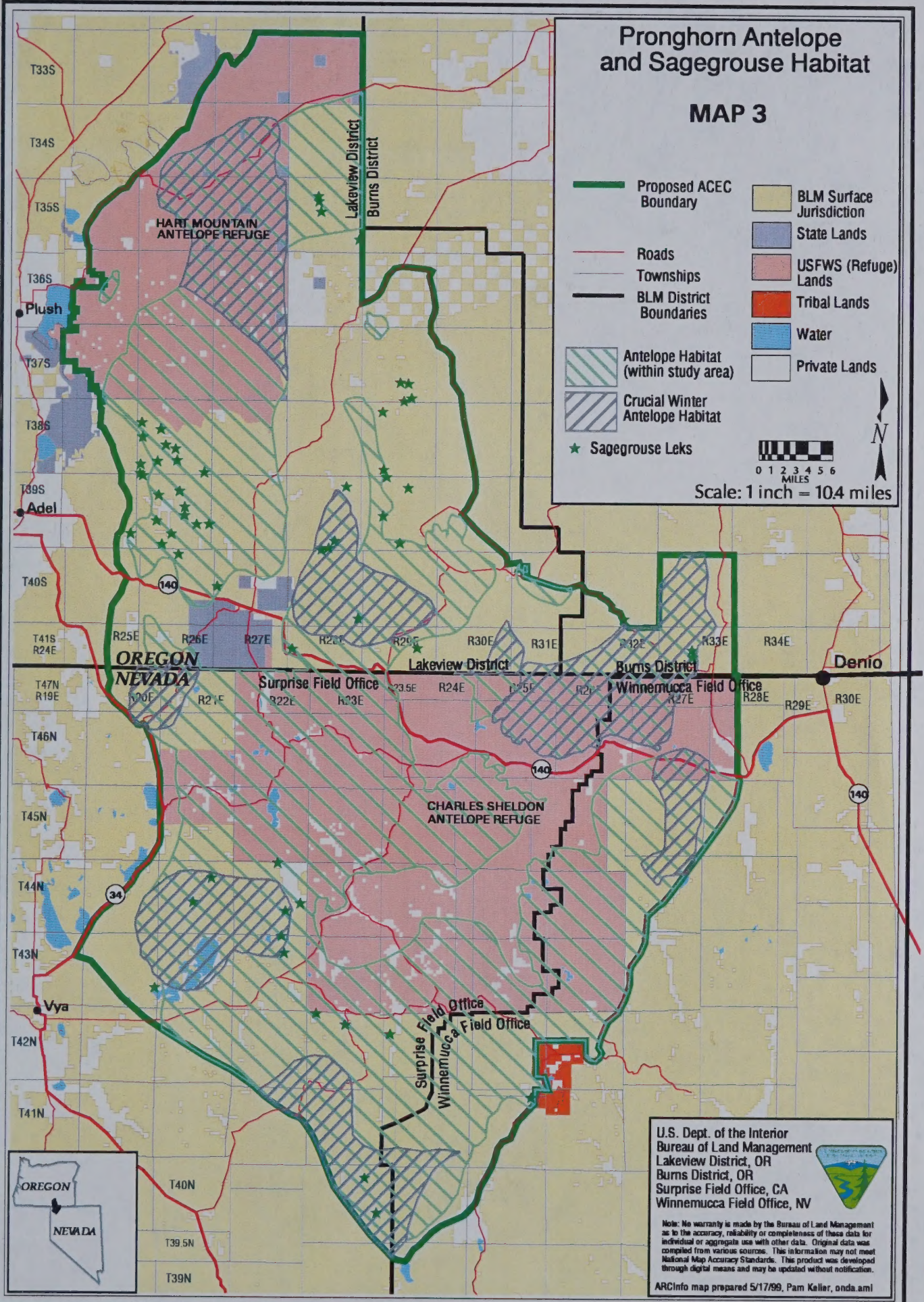
Pronghorn Antelope and Sagegrouse Habitat

MAP 3

-  Proposed ACEC Boundary
-  Roads
-  Townships
-  BLM District Boundaries
-  Antelope Habitat (within study area)
-  Crucial Winter Antelope Habitat
-  Sagegrouse Leks
-  BLM Surface Jurisdiction
-  State Lands
-  USFWS (Refuge) Lands
-  Tribal Lands
-  Water
-  Private Lands



Scale: 1 inch = 10.4 miles



U.S. Dept. of the Interior
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Lakeview District, OR
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ARCInfo map prepared 5/17/99, Pam Keller, onda.ami

